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LINGUISTIC HUMOR COMPREHENSION IN SPANISH AS A SECOND LANGUAGE

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LINGUISTIC HUMOR COMPREHENSION IN SPANISH AS A SECOND LANGUAGE

by

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DEDICATION

This dissertation is dedicated to my loving husband and children.

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LINGUISTIC HUMOR COMPREHENSION IN SPANISH AS A SECOND LANGUAGE

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The aims of this study are twofold: (1) to examine the development of linguistic humor interpretation and comprehension by second language (L2) Spanish learners by using a linguistic humor instrument comprised of comic strips, considering the linguistic properties of Spanish; and (2) to see whether and how reading comprehension ability is reflected in the understanding of four types of linguistic-based humor (i.e. semantic, syntactic, phonological, and morphological). Also discussed are the comprehension strategies utilized by the participants during humor processing. To address these goals, a mixed methods approach was implemented through a linguistic humor multiple-choice questionnaire together with a think-aloud protocol.

Results are discussed with reference to Raskin's (1985) Semantic-Script Switch Theory of Humor (SSTH). The data indicate: (1) comprehension of linguistic-based humor increases with L2 study; (2) L2 learners struggle most with polysemic lexical items; and (3) cognate status and pseudofamiliar words impede comprehension. Considering the analysis of the data, a reassessment of the SSTH and how it applies to L2

humor processing is suggested. Notably, linguistic-based scripts tend to dominate access to other non-linguistic based scripts because L2 learners remain within the linguistic-script frame and are unable to access and/or utilize non-linguistic scripts such as background knowledge. Furthermore, L2 learners contend with error scripts as an additional obstacle, which NS do not experience.

The findings suggest that learners should be encouraged and explicitly taught about lexical depth in order to increase their ability to infer meaning from context, thereby increasing their metalinguistic knowledge base. Recommendations are made for the adjustment of the SSTH theory to be more inclusive of L2 learning environments. Finally, suggestions for the L2 classroom include: (1) methods to increase metacognitive awareness; and (2) pedagogical approaches to introduce language-based humor.

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CHAPTER 1: INTRODUCTION

1.1 Humor Comprehension and the L2 Learner

To understand a second language (L2), linguistic, pragmatic, and cultural knowledge are necessary components of comprehension because they enable the recipient to process not only literal interpretations but also implied meanings or implicatures (Koike, 2009). A learner lacking in L2 linguistic competence may not have the lexical and pragmatic development necessary to understand humor. Gass and Varonis (1985) point out that ‘‘[Non-native speaker] NS interlocutors tend to attribute to the [non-native speaker] NNS a knowledge of sociolinguistic rules of interaction based on a demonstration of familiarity with the purely linguistic rules. A failure in communicative competence [...] then, is perceived as an intentional act and not a mistake” (p.130).

Conversely, communication problems could be attributed to a lack of linguistic knowledge, especially when an L2 learner is trying to convey or understand humor. Attardo (2003) asserts, “…laughing after a joke expresses some degree of agreement with the speaker that the occasion was appropriate for joking (among other things, of course). Withholding laughter may therefore be seen as rejection of this implicit claim and therefore as disapproving” (p.1289). Overall, the repertoire of lexical choices, pragmatic knowledge, and semantic interpretations in the second language is limited for the L2 learner. The construction and comprehension of humor in an L2 constitutes a challenge to L2 learners, as it often requires sophisticated linguistic, social and cultural competence (Bell, 2007; Raskin, 1985). The use and understanding of humor may be one aspect of

sociolinguistic competence that is prone to misinterpretation. Although humor miscommunication is possible in the first language, problems such as these appear heightened in the L2 context. As L2 learners progress through their language study, they should develop a more elaborate and expanded vocabulary base, comprehend multiple meaning words, and identify related words and cognates (Docking, Jordan, & Murdoch, 1999; Paul, 1995). Their pragmatic skills should also improve to include the ability to use and understand language that has a figurative, rather than a literal, function (Docking, et al., 1999).

The following studies demonstrate a difference between native and non-native speakers in their understanding of humor and the notion that L2 humor is difficult to comprehend. Using a multiple-choice questionnaire, as well as five open questions, Richardson (1989) found that, while advanced EFL (English as a Foreign Language) students grasped linguistic aspects of humor better than intermediate learners, there was little difference between the two groups in their understanding of the cultural aspects of L2 humor. Morain (1991), using cartoons, also concluded that the cultural component of humor is vital. An average of 26% of the international students who claimed to understand a certain cartoon actually had not grasped the intended meaning, as shown in their written explanations of why the cartoon was funny. Also, interviews with graduate students who had been in the country several years revealed that their judgments of the cartoons were at nearly the same level of comprehension as the international students whose stays had been relatively short. Finally, L2 learners seem to enjoy using, creating,

and playing with vocabulary, slang, and colloquial language (Hopper, 2005; Nippold, 1988). Therefore, an awareness of the types of humor learners can comprehend may provide a better appreciation for the process of L2 acquisition and may be a window into the pragmatic development of L2 learners.

In addition to the comedic and linguistic saliency of cartoons, many language-learning goals can be achieved. Students seem to enjoy reading cartoons because they can smile and laugh during the incongruity resolution stage. The ability to develop an understanding of linguistic humor, which is often based on language ambiguity and competing scripts, can help foster flexibility in thinking about language and social situations (Hamersky, 1995). Figurative language, such as an ambiguous phrase, is a fundamental part of linguistic humor and if L2 learners have difficulty understanding figurative language, then they may have difficulty understanding other types of humor. Figurative language occurs frequently in conversational speech and written materials. Lack of understanding humor can result in frustration, embarrassment, and confusion, especially when up to two-thirds of the English language and one-third of 'teacher talk' (the variety of speech used by teachers in addressing their students) contains ambiguous language (Arnold & Hornett, 1990; Boatner & Gates, 1975; Nippold, 1985).

According to Wiig (1984), difficulty in understanding humorous exchanges based on interpretations of figurative language could adversely affect relations with peers, educators, and prospective employers. Various researchers have investigated the use of L2 humor from a sociocultural viewpoint and have found language play to be a potential

aid to language acquisition (Broner & Tarone, 2001; Sullivan, 2000). Bardovi-Harlig and Dörnyei (1997) found that ESL learners at all proficiency levels could indicate when an utterance was grammatically incorrect but pragmatically appropriate more readily than a statement that was grammatically correct but pragmatically inappropriate, showing the preference of learners to focus initially on grammatical comprehensibility. Blyth (2003) has argued for pedagogical approaches that embrace the poetic and playful nature of language, which may help to foster pleasure in the foreign language classroom. The benefits of language play in the classroom allow learners to develop their sociolinguistic competence by permitting them to practice unfamiliar speech act varieties.

The goal of using humor input in the classroom is not to familiarize learners with all types of humor used in the target culture, but to raise their awareness of different expressions of humor, thus enabling them to understand and use these options if they use or hear humor on their own. Although humor is a universal phenomenon, its specific content varies according to social situations and specific cultural influences. To be accepted into the target language environment (inside and outside the classroom), appropriate interaction might involve riddles, jokes, and puns. Therefore, L2 classrooms can be seen as communities of practice that can help a learner's pragmatic socialization and L2 identity (Schmitz, 2002). In these classrooms, educators have an opportunity to use humor to enliven the classrooms, to establish and maintain rapport, to create an appropriate ambiance for learning, and to enhance student acquisition and retention (Berwald, 1992). After reading and processing humorous input, the learner should have a

better idea of how humor is expressed. Askildson (2005) discusses how humor indirectly impacts the affective nature of learners. In his view, humor in the classroom increases the physical and psychological rapport between individuals. This rapport between all individuals in the class can reduce tension and anxiety and stimulate interest in language learning. If learners are to succeed in their language study, then they must receive varied input in the classroom.

Although there is much to learn about languages and culture with relatively little time to do so in the classroom, it may not be wise to withhold humor input until the later stages of learning or hope they acquire it as they interact with native speakers (Bell, 2009). If L2 learners are to become proficient in their target language, they should develop strategies to help them comprehend and interact within humorous exchanges (Schmitz, 2002). Providing humorous input in the classrooms can increase learners' vocabulary through direct and incidental learning, expand their world knowledge, help to develop linguistic awareness, improve comprehension of figurative language, and provide NS examples of humorous language in various mediums. If students can understand the humor they encounter in the classroom then they may experience an increase in confidence and a feeling of empowerment in coping with social interaction in the target language (Spector, 1992).

This chapter presents the importance and significance of the present study by addressing the lack of current studies on SLA (second language acquisition) and humor comprehension and justifying the need for this study. The dominant humor

comprehension theories are addressed with special attention given to Raskin's (1985) Semantic-Script Switch Theory of Humor. In addition, linguistic-based humor is discussed and each of the four linguistic areas of humor (phonological, semantic, syntactic, and morphology) is individually explained with corresponding examples. Following the discussion of the four humor types, an explanation of comic strips as a means for measurement is offered. The chapter continues with a discussion of humor comprehension and its importance in the L2 classroom. Finally, we conclude with a brief discussion of how the current study is situated within the larger field of SLA and how it contributes to the general discussion of communicative competence.

1.2 Humor Comprehension Theories

Humor comprehension theories and humor research have generally fallen into three main categories: (1) psychoanalytical or release/relief; (2) social/ behavioral or disparagement; and (3) cognitive/perceptual or incongruity.

1.2.1 The Psychoanalytical or Release / Relief Theories of Humor

The first group of humor theories is comprised of the release/relief theories, which perceive humor and laughter as a release of the tensions and inhibitions generated by societal constraints. The best known theory is Freud's (1960), which claims that humor allows an economy of 'psychic energy' and focuses on the recipient of humor, or more specifically, on the psychological effects humor brings about in the recipient. Freud considers humor as one of the substitution mechanisms, which enable one to convert socially tabooed aggressive impulses to acceptable ones and thus avoid wasting mental

energy to suppress them. Freud (1960) spoke of "the release of comic pleasure" (p. 282) and believed that humor was the release and the relief of pleasure. Freud classified humor based on the particular kind of relief it elicited: "The pleasure in jokes has seemed...to arise from an economy in expenditure upon inhibition, the pleasure in the comic from an economy in expenditure upon ideation...and the pleasure of humor from an economy of expenditure upon feeling" (p. 302). These theories conceptualize humor as a complex interaction between emotion and cognition and posit that humor and laughter are a combination of cognitive appraisal with optimal physiological arousal (Berlyne, 1974; Fry, 1963; Fry & Allen, 1975; Martin, 1989). Ultimately, this theory views humor and laughter as releases of built-up tension and stress (Mindess, 1971; Mindess, Miller, Turek, Bender, & Corbin, 1985).

1.2.2 Social / Behavioral or Disparagement Theories of Humor

A second class of humor theories includes those based on malice, hostility, or derision and accentuates the (negative) attitude of the producer and/or user of humor towards its target and the aggressive character of laughter. That is, humor is pointed against some person or group, typically on political, ethnic or gender grounds. In short, funniness of a joke depends on the identification of the recipient with the person (or group) that is disparaging and with the victim of the disparagement. The theory proposes that “humor appreciation varies inversely with the favorableness of the disposition toward the agent or the entity being disparaged, and varies directly with the favorableness

of the disposition toward the agent or the entity disparaging it" (Zillmann & Cantor, 1976, pp. 100-101).

Scholars, theorists, and researchers who espouse theories of humor based on hostility or malice frequently cite the similarities between aggressive behavior, such as fighting, and laughter to substantiate their claims (Kallen, 1911; Ludovici, 1932; Rapp, 1951). Gruner (1978) claims ridicule is the basic component of all humorous material, and if one wants to understand a piece of humorous material it is necessary only to find out who is ridiculed, how, and why. Laughter is thought to result from a sense of superiority derived from the disparagement of another person or of one's own past blunders or foolishness. Theories on disparagement, malice, hostility, derision, aggression, or superiority characterize the attitudes between the joke teller and the target of the joke text. Therefore, the disparagement theory views humor and laughter as the means by which to temper the aggression and aggressive behavior they examine.

1.2.3 Incongruity Theory of Humor

The Incongruity Theory arose in the 18th century to compete with the Disparagement Theories and now dominates humor research (Morreall, 1987; Raskin, 1985). This theory says that humorous amusement is a reaction to something incongruous, something that does not fit our ordinary mental patterns. Morreall (1987) claims that because humans can perceive and enjoy incongruity, they have been able to view the world in 'nonpractical ways' and have facilitated the development of rational thinking, objectivity, and humor. Apte (1985) anchors humor to culture, asserting that

humor "is primarily the result of cultural perceptions, both individual and collective, of incongruity, exaggeration, distortion, and any unusual combinations of the cultural elements in external events" (p. 16). Essentially, humor is located in the incongruity and the audience must identify, perceive, and resolve the humorous incongruity. For the proponents of incongruity-based theories of humor, humor exists, irrespective of an audience, and failed joke texts are considered failures on the part of the audience to understand the joke, to find the humor in the incongruity. The audience does not have an active role in the humor and exists only to identify, perceive, and resolve the incongruity that is already present in the text of the joke.

Suls (1972) proposed an “Incongruity-Resolution Theory”, according to which the ability to comprehend humor is crucially dependent upon the ability to resolve the incongruity between the punch line and the expectations shaped by the storyline. This theory separates humor into two distinct states: surprise and coherence (Brownell, Powelson, & Gardner, 1983). Surprise is a feeling generated by an unexpected situation. To comprehend a joke, however, one must go beyond the state of surprise and formulate a new, coherent interpretation of the information. The perceivers of the humor recognize the incongruity between the punch line and what they were expecting and, consequently, embark on a sort of problem-solving exercise, in which they are required to transform scripts or frames into humor.

Frames (Minsky, 1980) and scripts (Schank and Abelson, 1977) were proposed as knowledge structures for stereotypical situations and events. Terms such as *scripts*,

scenarios, *schemata*, *speech activity*, *communication mode*, and *keyings* have been used to relate to the concept of interactive and knowledge structure frames. *Frame* as an interactive mode emphasizes different purposes of actions during speech acts in which speakers frame their actions as 'serious' or as 'play' (Coates, 2007). This 'framing' is usually done through signals or 'contextualization cues' (Gumperz, 1982) including verbal and non-verbal cues. A similar distinction between seriousness and playfulness is discussed in Raskin's (1985) work on jokes. Raskin (1985) introduced the notion of non-*bona-fide* communication as an opposite of *bona-fide* communication. *Bona-fide* communication is defined as "the earnest, serious, information-conveying mode of verbal communication" (Raskin, 1985, p. 100). Speakers engaged in non-*bona-fide* communication know that the communication is not earnest or serious, and may not be information-conveying. The importance of distinguishing the two *frames* or the two communication modes is that it tells how listeners should interpret speakers' utterances. A statement can mean very different things when it is used in different *frames*. For instance, the utterance *'Don't be such a dunce'* can be perceived as an insult in the serious frame, but a teasing in the play frame.

Frame, as a knowledge structure, emphasizes cognitive representation of the world and was first introduced into linguistics by Charles Fillmore in the 1970s (Fillmore, 1977). It was originally used to analyze verbs and their relations to sentence structures. Hence, *frame* was defined as "any system of linguistic choices" (Ungerer & Schmid, 2006, p. 209), including choices of words, grammatical rules, and linguistic

categories. The interpretation of *frame* has since changed from *linguistic choices* to *knowledge structure*. Frames have been applied in various aspects of language studies, for instance, semantics (Fillmore, 1977; Raskin, 1985), discourse analysis (Brown & Yule, 1983), L2 discourse co-construction (Koike, forthcoming), verbalization (Chafe, 1977), linguistic indicators (Shanon, 1981), and artificial intelligence (Minsky, 1975). The application of these ideas to humor comes in the 'Script-based Semantic Theory of Humor' (SSTH) proposed by Raskin (1985), and capitalizes on the Incongruity-based Theories of humor.

1.2.4 Semantic-Script Switch Theory of Humor Comprehension

The Semantic-Script Theory asserts that humor is perceived when an incongruity in a situation or statement is recognized and then resolved. This general assumption led to various 'script-switch' theories of humor comprehension that dominate the field today (Attardo & Raskin, 1991; Norrick, 1986; Raskin, 1985; Veatch, 1998). This theoretical foundation states that all humor has a semantic-pragmatic process, based on the theory that humor creates a semantic opposition between scripts or frames.

> A script is an organized complex of information about some entity, in the broadest sense: an object (real or imaginary), an event, an action, a quality, etc. It is a cognitive structure internalized by the speaker which provides the speaker with information on how a given entity is structured, what are its parts and components, or how an activity is done, a relationship organized, and so on, to

> cover all possible relations between entities (including their constituents). (Attardo, 2001, p. 2)

The Script-Switch Theory is centered on the idea of opposing scripts and presupposes access to a nearly complete semantic network. To analyze a text within this framework, investigators follow specific steps, arriving at a final humor analysis. The initial step is to list all senses of the words (i.e. all the scripts activated by a particular lexical item). This activation of scripts includes all the presuppositions and inferences that can be made based on compatibility with the script. If one were to include all the presuppositions about one lexical item, the list could be infinite. Therefore, certain requirements are necessary. First, there must be at least two interpretations or readings of the same script, which is considered the overlapping of the two scripts. This overlapping can either be partial or total. During this step, one would look for lexical items in the text that evoke the same script. These similar lexical items are then further analyzed to look for triggers of inferences. In other words, when the expected script does not materialize, a competing script is sought. This step would be considered an alternative interpretation of the script.

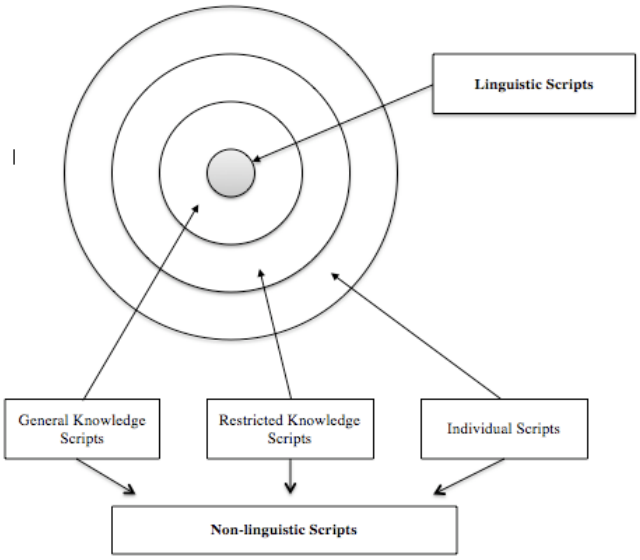
The second requirement calls for the two scripts to be opposing in nature. The lexical information found in a script causes the hearer to process the information both semantically and pragmatically. This process activates various pre-known scripts or implicatures about the topic and ultimately leads to an interpretation of the information presented. All of these scripts and their links to other scripts form the ‘semantic network’,

which is a person's knowledge about a particular lexical item. As each lexical item or script comes into play, the listener filters out the inappropriate interpretations.

According to Raskin (1985), a joke is characterized by the fact that its text, or some part thereof, is compatible with two scripts, which are opposite in a special sense. The underlying opposition is that of real versus unreal with three major subtypes: actual vs. nonactual, normal vs. abnormal, and possible vs. (partially) impossible. Somewhat independently of this basic three-way taxonomy of script oppositions appearing in jokes, Raskin (1985, p. 113) introduces another dimension along which oppositions can be classified, involving "relatively few binary categories which are essential to human life"; namely, good vs. bad, death vs. life, obscene vs. non-obscene, and money vs. no money. Raskin (1985, p. 114) also singles out "three groups of standard script oppositions constituting sexual, ethnic, and political humor", which he exemplifies.

Therefore, when an individual is attempting to understand a joke, a mental script is activated to make sense of the events that are described in the joke setup. However, the punch line of the joke introduces elements that are not compatible with that original script, triggering a switch from one script to another. The punch line makes the listener backtrack and realize that a different interpretation (i.e. an alternative script) is possible. In order for this text to be viewed as humorous, this second, overlapping script must be in opposition to the first. The figure below demonstrates the different types of scripts as distinguished by Raskin.

Figure 1.1: Raskin's Arrangement of Scripts[1]

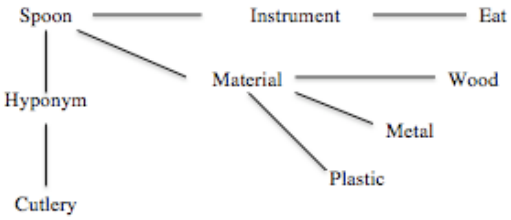


The circle in the center shows the linguistic scripts (i.e. those that are supposed to be known to any native speaker). The external circles represent the non-linguistic scripts in order of accessibility to speakers. General knowledge scripts are those generally known to speakers, but do not directly affect their use of the language (e.g., Spain is in Europe). Restricted knowledge scripts are known to a small number of people because they are specialists in a certain area, or members of a particular group of society (e.g., Catalán is spoken in Barcelona). Individual scripts are unique to a person (e.g., a study-abroad experience in Barcelona). General knowledge, restricted, and individual scripts refer to knowledge of the world (encyclopedic knowledge), not to information pertaining to words (linguistic knowledge).

[1] Adapted from Raskin (1985, p. 247).

The relationships between lexical and non-lexical scripts are linked by a 'semantic network' (Raskin, 1985). This network establishes relationships between different scripts based on how they are linked. The links can be of different semantic natures (synonymy, hyponymy, antonymy, etc.). The set of scripts in a speaker's lexicon, their links, and all the non-lexical scripts and their links form the "semantic network". Figure 1.2 represents a fragment of a semantic network.

Figure 1.2: A Fragment of a Semantic Network[2]



Accordingly, the script for 'spoon' could be related to many different scripts like cutlery, eating, soup, cereal, metal, plastic, etc. The number of scripts activated and what they are depends on the speaker's knowledge about the individual topic. Raskin's theory presupposes an ideal speaker with access to a complete semantic network of their native language and all possible combinatorial rules. The semantic network and combinatorial rules allow the speaker to evaluate the structure of sentences, which ultimately enables the speaker to determine whether a text is funny or not. For instance, the two specific scripts opposed in joke (1) below are DOCTOR and LOVER:

(1) A: "Is the doctor home?" the patient asked in his bronchial whisper.
B: "No," the doctor's young and pretty wife whispered in reply. "Come right in." (Raskin, 1985)

[2] Adapted from Raskin (1985, p. 83).

According to Raskin's theory, the first part of this joke evokes a standard 'doctor' script (which is presumably stored in the listener's semantic network) in which a patient presents himself at a doctor's residence to be treated for an illness that causes him to have a hoarse voice, and is told that the doctor is not there. However, the doctor's wife's invitation for the patient to enter the house anyway does not fit with the 'doctor' script, so the listener must backtrack and reevaluate the text. The information that the doctor's wife is young and pretty and that she is inviting the patient into her house when her husband is away activates a different (i.e. 'lover') script. Both the 'doctor' script and the 'lover' script are compatible with the text, and these two scripts are opposed to one another (Martin, 2007; Raskin, 1985). To invoke the necessary scripts, the listener must possess an awareness of the scripts triggered for humor. Sometimes several scripts may be evoked, as in the following:

(2) Nancy Reagan insisted on the free distribution of the government butter surplus to the truly needy. She said, "Even these poor people must have something to dip their lobster tails into". (Raskin 1985)

Raskin points out that, in order to find this piece humorous, the audience must have incorporated scripts that correspond to the fact that the government was distributing surplus butter, that the Reagans were often portrayed as cavorting with the wealthy, and that lobster tails are extremely expensive, which makes them an unlikely meal for the poor. Other scripts may be opposite in the sense that they are antonyms:

(3) A rogue who was being led out to execution on a Monday remarked, "Well, this week's beginning nicely". (Raskin 1985)

Here the scripts are the antonyms of 'life' and 'death'. Often, however, the opposition that is the set up is of "two linguistic entities whose meanings are opposite only within a particular discourse and solely for the purposes of this discourse" (Raskin 1985, p. 108). More broadly explained, jokes describe 'real' situations, then evoke 'unreal' situations that are incompatible within the text.

The trigger, which can be either a type of ambiguity or contradiction, causes the switch between scripts. The jokes make sense in the beginning, but upon introduction of the second script, a contradiction or ambiguity arises and the entire text must be reinterpreted. Raskin notes that quite often a joke begins with an obvious trigger, such as a homonym, which immediately prompts a pun. The relative ease with which these are formed explains why they are so often derided (Raskin, 1985). Even more often, the joker can find both the trigger and one script already in place, and must create a text only with an opposite script, as in the following example:

(4) A: Our farmer
B: Who art in heaven…(Chiaro, 1992)

Raskin notes that the less obvious the script opposition, the more amusing the resulting joke may be, as demonstrated by the previous example. This idea that the less obvious the script opposition, then the more likely the joke will be humorous, led to a revised version of the SSTH by Attardo and Raskin (1991), called the General Theory of Verbal Humor (GTVH). The GTVH is presented as an expansion of the SSTH, but addresses that: (1) the SSTH is limited to handling jokes; (2) some jokes are perceived as

being more or less similar to others; and (3) verbal and referential humor differ (although not semantically).

To account for these new variables, the GTVH introduces the concepts of Knowledge Resources beyond the basic script opposition/overlap. These Knowledge Resources include the language of the joke (i.e. its surface structure), the situation (i.e. the subject matter of the narrative text), the target (i.e. the joke recipient), the narrative strategy corresponding to the genre of the text (e.g., question and answer, 'knock knock', etc.), the logical mechanism (i.e. the mechanism in which the script opposition is introduced and may correspond to the resolution phase of the processing), and the necessity of script opposition. The six Knowledge Resources are used to determine the degree of similarity between paraphrased or slightly different jokes. They assume that the more Knowledge Resources that two or more jokes share, the more similar they are. The current study does not address issues related to verbal humor because the humorous data is presented in comic strip form.

The GTVH was designed as an extension of the SSTH to be used in the analysis of joking texts (both verbal and written). Raskin's SSTH corresponds to the idea script opposition (a subset of the GTVH) which is the central basis of humor found in the comics presented in the current investigation. The language-based humor presented in this dissertation does not address the question of the comicity of the text nor does it question the situation, target, or narration strategies of the participants. Therefore, the SSTH is a more applicable theory to the current study.

Raskin's theories are not without their critics. Brône and Feyaerts (2004) point out that few insights from the paradigm of cognitive linguistics have been incorporated into and applied to (verbal) humor studies. Cognitive linguistics could provide an adequate framework for the analysis of the interplay of quantitative and qualitative aspects in humor. The authors believe humor to be "a widely under-franchised topic in CL [cognitive linguistics], and the other way around, humor research has paid relatively little attention to the insights and tools developed in CL" (Brône and Feyaerts, 2004, p. 362). While Raskin's humor theories primarily describe the semantic structure of humorous texts without reference to normal language use, a CL account could highlight the interrelationship between 'normal' language use and 'marked' humorous utterances. Brône and Feyaerts (2004) question the introduction of logical mechanisms in the GTVH, defined as the operations that guide the process of incongruity resolution in humor interpretation. Instead, they discuss the notion of a prototype model of construal operations, in which non-prototypical uses may yield humorous effects.

Cook (2000) sees the SSTH as being able to offer only post-hoc explanations of humor. In addition, he faults Raskin for neglecting the powerful social aspects of humor and for viewing jokes as bounded entities. Also, the idea of script opposition is not unique to humor comprehension theories; the concept can be applied to other arenas of comprehension.

However, Raskin did not propose SSTH as a *unified* theory of humor, but rather as a *linguistic* theory of humor. As such, it has served to demonstrate the linguistic

complexity involved in humorous communication, thus uncovering some of the reasons why it may be a challenge to many L2 learners.

Prior studies contribute to L2 humor research (see Section 1.6 for a more detailed discussion), but theoretical claims and observations should be verified with empirical evidence and discussed within a framework that connects the SSTH and linguistic-based humor with the L2 learner. Attardo (1994) suggests that cultural-based scripts are the only type that should be taught to L2 learners, specifically which scripts are considered unavailable or 'taboo' and which scripts would be considered appropriate. This dissertation fills a void by providing an experimental study, considering both learners and linguistic-based humor as the independent variables. It also offers a new approach to the application of the SSTH to L2 studies and L2 communicative competence by analyzing which scripts are necessary for linguistic-based humor comprehension and suggesting the idea that certain scripts may confound comprehension.

1.3 Humor Categorization

1.3.1 Reality-based Humor

For the purpose of language teaching and learning, Schmitz (2002) proposes three basic categories of humor. The first category refers to humor obtained from the general functioning of the real world. This type of joke can be considered universal, or a 'reality-based' joke, because this type of humor theoretically can be translated from one language to another. Two examples are presented below

(5) Last week I went fishing and all I got was a sunburn, poison ivy, and mosquito bites.

(6) Gee, Dad. That's a swell fish you caught! Can I use it as bait? (Schmitz, 2002)

A sarcastic remark is the basis of the humor presented in (5). In (6), the humorous retort is provided by a son whose father exaggerates the size of his catch. The humorous texts in (5) and (6) deal with real world situations, and human behavior (lying, exaggerating, bragging and asking obvious questions) (Schmitz, 2002).

1.3.2 Culture-based Humor

The second category includes culture-based jokes that may or may not translate well because the listener must be familiar with the specific cultural practices of the target language society The humor of a particular culture or group may seem pointless or puzzling to foreigners who lack the cultural foundation or knowledge regarding cultural nuances (Nevo, Nevo, & Yin, 2001). Culturally-based jokes can "serve as mirrors of the socio-cultural practices of the society and can inform the learner how some members of the community view themselves" (Schmitz, 2002, p. 101). Observe examples (7) and (8):

(7) A: Why does California have the most lawyers and New Jersey the most toxic waste dumps?
B: New Jersey had first choice (Rafferty, 1988)

(8) A: Do you know what I got for Father's Day?
B: No, what?
A: The bill for Mother's Day (Schmitz, 2002)

In (7) the answer to the question is based on the understanding that lawyers are the butt of many humorous texts. In (8) the listener must understand the concept of Mother's Day and Father's Day (i.e. that more money will likely be spent on cards,

flowers, gifts, etc. than Father's Day) as well as when they occur (i.e. Mother's Day occurs before Father's Day). This joke invokes a stereotype shared by certain members of the society that only men pay the bills and are supposedly the sole providers. It also imputes some irresponsibility to wives and children in their buying habits. The text also points to materialism and the superficiality of giving of presents in the culture. Although Schmitz asserts that cultural jokes do not translate across languages, this joking style should still be considered an asset in the classroom and to L2 learners.

1.3.3 Linguistic-based Humor

The third group includes linguistic jokes based on manipulation of the phonology, morphology, syntax, or semantics of the particular language. Linguistic-based jokes may not always be humorous between languages (Schmitz, 2002). Linguistic-based humor occurs when two or more different underlying semantic structures may be represented by a single surface representation. The nature of this surface representation is such that the actual utterances (that is, the phonological forms) of the ambiguous structures are identical for the different underlying structures involved. The correspondence of surface forms may be the result of linguistic processes that occur at the phonological, morphological, or syntactic levels of grammar. Linguistic humor can be found in verbal forms (riddles, jokes, and puns) as well as in visual forms (cartoons and comic strips); both forms of linguistic humor have been used with equal effectiveness to test humor competence (Spector, 1992).

(9) A: When is a boat like a heap of snow?
B: When it's adrift.

(10) A: When does a cabbage beat a beet in growing?
B: When it gets ahead. (Tidwell, 1956)

The puns in (9) and (10) lose much of their 'humor' in writing. English has a large stock of phonological jokes that bring together different meanings of a specific word or sound. In (9) the learners must have familiarity with snowdrifts and boats adrift. In (10) the humor presupposes an understanding of cabbages: cabbages come in 'heads' (e.g. a head of cabbage, a head of lettuce) as distinguished from winning a competition, beating someone in a game or contest, which is 'getting ahead'. In addition, there is a play on the homophony between 'beat' as a verb with the meaning to defeat and 'beet' as a noun referring to a type of vegetable. While the content of humor may differ across cultures, the forms taken by linguistic-based humor are shared and distinguished across languages (Ashkenazi & Ravid, 1998). In other words, the humor may translate directly (typically in lexically-based humor) or not (such as phonology-based humor) but the overall idea or construction of the joke is the same across cultures.

As shown in the previous section, linguistic humor depends upon linguistic ambiguity. Such jokes may be classified according to the type of ambiguity that they involve. Apart from a purely theoretical and descriptive interest, there are practical benefits of having such a classification that go beyond humor studies. For example, jokes classified by the type of linguistic ambiguity involved have been used to test the perception of ambiguity in children, thus contributing to research on language acquisition and development (Fowles & Glanz, 1977; Hirsch-Pasek, Gleitman, & Gleitman, 1978;

Shultz, 1974; Shultz & Pilon, 1973; Shultz & Robillard, 1980). They can also be used to test the perception of ambiguity in language-impaired individuals, thus assisting in research on language deficits (Spector, 1990).

In such studies, whether and when the ambiguity is perceived can be tested by investigating if and under what conditions participants get the jokes. In order for such studies to be successful, however, the jokes must be classified consistently and correctly. Linguistic humor typically distorts and plays with language 'rules' and occurs when a linguistic element is manipulated (Hamersky, 1995; Pepicello, 1980). In order to understand linguistic humor the individual must recognize the manipulated linguistic element that causes the incongruity and then draw an inference about how the incongruity is solved (Hamersky, 1995). Understanding and appreciating linguistic jokes depends on the ability to detect ambiguity, reflect on language as an entity, and analyze language into its linguistic units (Spector, 1992). The classifications developed by Green and Pepicello (1978) and Pepicello (1980) include groups of what they describe as 'linguistic strategies'. These strategies create 'block elements' or elements that impede the perception of the ambiguity present in a humorous item. Block elements also have been defined by George and Dundes (1963) in their description of riddles as internal contradictions. Hamnett (1967) pointed out that in riddling, an ambiguous word or element (the block) can be seen as belonging to two or more frames of reference, according to the interpretation forced on it. Most of the elements involve grammatical ambiguity, where "words or phrases have more than one underlying semantic structure,

but are identical in surface form as a result of processes at the phonological, morphological, or syntactic levels of grammar" (Pepicello & Weisberg, 1983, p. 65). Green and Pepicello (1978) and Pepicello (1980) identified 10 linguistic elements that can be manipulated to create humor. These elements are arranged according to their phonological, morphological, or syntactic classification.

1) Phonological items based on:
    a. lexical pairs
    b. minimal pairs
    c. metathesis
    d. stress/juncture
2) Morphological items based on:
    a. irregular morphology
    b. morphological analysis
    c. exploitation of bound morphemes
    d. pseudomorphology
3) Syntactic items based on:
    a. phrase structure
    b. transformational ambiguity

The following sections discuss each of the linguistic humor types, provide examples for clarification, and address the purported acquisition order for the current

investigation. Finally, recommendations are made for the rearrangement and recategorization of the linguistic humor elements.

1.3.3.1 Phonological elements

1.3.3.1.1 Lexical Pairs

Phonological ambiguity refers to the sounds of words. Lexical pairs incorporate humor that is based on the ambiguity of a word. For example:

(11) The first horse motel was opened to provide animals with a *stable* environment. (Ashkenazi & Ravid, 1998)

The word *stable* is used in this first example to mean a building that houses animals, or steady and secure. Another example is:

(12) A famous sardine factory *canned* all its employees. (Spector, 1990)

The word *canned* is the ambiguous term – as in 'to fire someone' or 'to can fish in a factory'.

1.3.3.1.2 Minimal Pairs

The minimal pairs pattern involves the difference of one phoneme. For example:

(13) Men's briefs are manufactured in the West *Undies*. (Spector, 1990)

The phoneme change of *Indies* to *Undies* is the source of humor. The following joke also plays on minimal pairs:

(14) A: What do you get when you cross a galaxy with a toad?
B: Star *Warts* (Docking, Jordan, & Murdoch, 1999)

The addition of the phoneme /t/ to *Wars* is the basis of humor.

1.3.3.1.3 Metathesis

Humor based on metathesis occurs when a sound or word reversal is the element employed. For example:

(15) A knife that cuts four loaves of bread at the same time could be advertised as a *four loaf cleaver.* (Spector, 1990)

Joke (15) is a play on *four leaf clover*.

(16) Nasal Spray Salesman – a guy who goes around sticking his business into other people's noses (Spector, 1990)

Example (16) is a word reversal play on *sticking his nose into other people's business*. The next example (17) is also a word reversal play:

(17) FEUDALISM: It's your *count* that *votes*. (Hamersky, 1995)

1.3.3.1.4 Stress / Juncture

Stress/juncture occurs when the placement of stress changes the meaning of the statement, as in:

(18) The person who replaced the bulbs atop the John Hancock Building said it was the *highlight* of his career. (Spector, 1990)

The placement of stress on *highlight* can mean either the highest light bulb or the greatest moment of his career. A second example would be:

(19) Two weevils started life together. One was an immediate success, the other a complete failure. Naturally, it became known as the *lesser of two weevils*. (Spector, 1990)

A change of stress would expose the common expression *the lesser of two evils*.

1.3.3.2 Morphological elements

1.3.3.2.1 Irregular Morphology

Morphological ambiguity refers to word formation, as inflection, derivation, and compounding. Humor based on morphological elements includes irregular morphology in which the humorous element involves exploiting a misinterpretation of a grammatical form.

(20) Customer: I'd like a can of talcum powder, please.
Storekeeper: Would you like *it scented*?
Customer: No, thanks. I'll just take it with me. (Spector, 1990)

The word *scented,* meaning having an aroma, is intentionally confused with *sent* or *delivered*. Another example is:

(21) As Noah remarked while the animals were boarding the Ark, "Now I *herd* everything!" (Spector, 1990)

The humor lies in the use of *I herd* for *I've heard*.

1.3.3.2.2 Morphological Analysis

In morphological analysis, one morpheme is extracted from a word and treated as if it were an independent word with which it is homophonous. For example

(22) A: What do frogs sit on at mealtime?
B: Toad*stools* (Spector, 1990)

In this second example, the morpheme *coco* is isolated and references *coco* as in 'cocoa':

(23) A: What do you call a person who loves hot chocolate?
B: *Coco*nut (Spector, 1990)

1.3.3.2.3 Exploitation of Bound Morphemes

During the exploitation of bound morphemes, a bound morpheme is deliberately confused with an independent word or otherwise exploited. Examples (24) and (25) manipulate bound morphemes:

(24) A drama critic summed up his reaction to the opening of a Broadway play by saying, "I was *under*whelmed." (Hamersky, 1995)

(25) He was so inept that he couldn't hit the nails on the head, so we sent for an *ept* workman. (Spector, 1990)

In this second example, the removal of a bound morpheme results in a non-word.

1.3.3.2.4 Pseudomorphology

Pseudomorphology occurs when an independent word is deliberately confused with a phonological sequence from another, larger word, but the sequence is not a morpheme of the larger word. For example:

(26) A: What is the *key* to a good dinner?
B: A tur*key*. (Spector, 1990)

Here the free morpheme *key* is deliberately isolated as a phonological sequence from *turkey*, but the sequence in question is not a morpheme of the independent word. That is, *key* is not a morpheme of turkey.

(27) A: Where do pencils come from?
B: *Pennsyl*vania. (Spector, 1990)

In example (27), the independent lexical item, *pencil*, is isolated as an morpheme of the state of Pennsylvania.

1.3.3.3 Syntactic elements

1.3.3.3.1 Phrase Structure

Syntactic ambiguity refers to rules related to sentence or phrase structure. There are two instances in which the speaker manipulates the syntactic structure of a sentence for humorous effect. The first is syntactic phrase structure, in which a given surface sequence of words has more than one syntactic analysis.

(28) A: Whenever I'm *down in the dumps* I buy myself a pair of shoes.
B: So, that's where you buy them. (Docking, Jordan, & Murdoch, 1999)

The expression *down in the dumps* is typically used to indicate some form of depression, but the humor lies in the misrepresentation of the word *dumps* to indicate an undesirable part of town. Another example is:

(29) When the first automatic packaging machine was invented the inventor *made a bundle.* (Spector, 1990)

This example plays on the well-known expression *make a bundle* to mean make a lot of money, not the literal interpretation of making a bundle as in making a package. A final example demonstrates syntactic phrase structure humor:

(30) When the first credit card was issued, people *got a charge out of it.* (Spector, 1990)

Example (30) is a play on the expression to *get a charge out of something*.

1.3.3.3.2 Transformational Ambiguity

The second type of syntactic humor is termed transformational ambiguity and appears when two different underlying structures have an identical surface form as a

result of their respective syntactic derivations. This type is demonstrated in the following two jokes:

(31) Did you hear about the cannibal who wanted to stop where they *serve truck drivers?* (Spector, 1990)

(32) A: I can lift an elephant with one hand.
B: Really?
A: Sure. Get me an elephant *with one hand* and I'll show you. (Spector, 1990)

Joke (31) one can be interpreted as a location where truck drivers eat or as a restaurant that serves truck drivers as food. In the second example, the speaker is either a very strong individual or the elephant has only one hand.

Because the classification system developed by Green and Pepicello (1978) and Pepicello (1980) appears to be the most complete and well-organized method of delineating linguistic elements, it is used in the current study, with one modification. Of the ten linguistic categories outlined by Green and Pepicello (1978) and Pepicello (1980), nine appear to be appropriately placed according to their phonological, morphological, or syntactic classification. Only one, 'lexical items', appears misplaced within the phonological group. Other items in this group depend on manipulation at the phonological level; the lexical items do not. The lexical items do not fit into the morphological or syntactic groups either; consequently, they should be considered separately. Therefore, for this study, Green and Pepicello's classification was modified by placing *lexical items* into a separate category.

Hamersky (1995) found the morphological elements difficult to separate due to the subtlety of difference and collapsed them into one. I found the same difficulty and also placed the morphological elements into one category. In addition, the syntactic and phonological groups were combined into their own major categories. Therefore, the reorganization for the present study is demonstrated in Table 1.1:

Table 1.1: Elements of Linguistic Humor[3]

Linguistic Elements	Objectives	Examples
Semantics		
Lexical items Humor created by using words that have more than one meaning or based on the ambiguity of the word.	To identify and describe the ambiguous or multiple-meaning word that creates the humor.	"Never tell secrets in a cornfield, because corn has ears."
Morphology		
Exploitation of Bound Morphemes One morpheme is extracted from a word and treated as if it were an independent word with which it is homophonous.	To identify and describe the ambiguous or multiple-meaning word-segment that creates the humor.	"What is a bow that will never be used?" "A rainbow" A: "Where do pencils come from?" B: "Pennsylvania."
Phonology		
Minimal pairs Humor created by changing a sound in a word. The humor involves the difference of one phoneme.	To identify and describe the minimal pairs that create the humor.	"Men's briefs are manufactured in the West Undies."
Metathesis Humor created by interchanging sounds in two words or interchanging words. Where sound or word reversal is the element employed.	To identify the words or sounds that are interchanged to create the humor	"FEUDALISM: It's your count that votes."

[3] Table adapted from (Hamersky, 1995)

Stress/Juncture Humor created by an unexpected pause or stress placed in a word or phrase. The placement of stress changes the meaning.	To identify and describe the manipulation of stress or juncture that creates the humor.	A: "Knock, knock." B: "Who's there?" A: "Pasture." B: "Pasture who?" A: "It's past your bedtime."
Syntax		
Phrase Structure Humor created using a phrase or idiom with multiple meanings (a literal and a figurative meaning). A given surface sequence of words has more than one syntactic analysis.	To identify the multiple-meaning phrase that creates the humor.	A: "Whenever I'm down in the dumps I buy myself a pair of shoes." B: "So, that's where you buy them."
Transformational Ambiguity Humor created using a sentence with more than one meaning. Where two different underlying structures have an identical surface form as a result of their respective syntactic derivations.	To identify and describe the words that are being inferred to create the humor.	A: "We're having fish for dinner." B: "Really? What are you serving them?"

Comprehending linguistic humor requires (a) recognition of the manipulated linguistic element that causes incongruity and (b) recognition of how the incongruity is solved (Pepicello & Weisberg, 1983, p. 65). It is expected that L2 learners will demonstrate a clear acquisition order of the linguistic humor types based on a progression from sounds to idioms. Therefore, it is expected that the participants will have the highest comprehension of phonology-based humor followed by morphology-, semantics-, and ultimately syntax-based humor.

1.4 Comic Strips as Humor Text

Humor can be found in verbal (e.g. conversation, stand-up) as well as written (e.g. comic strips, satirical writing) forms. According to Spector (1992), both verbal and visual forms can be used with equal effectiveness to test humor comprehension. The current study uses visual items (i.e. comic strips) rather than an audio-based modality like

conversation. The visual form of humor was chosen because the combination of the picture and the written element provide a humorous framework for the learner to attend to and analyze. Comic strips are considered communicative, popular, accessible, and readable because they combine aesthetic perception with intellectual pursuit (Harvey, 1994; Inge, 1990; Liu, 2004; O'Sullivan, 1971; Swain, 1978).

The language used in comics may reveal some of the humorous norms found in society, such as socially appropriate language and canonical speech acts. In fact, Labov (1972) suggests that research on language use should be concerned with "that vehicle of communication in which [people] argue with their wives, joke with their friends, and deceive their enemies" (p.xiii). The authenticity of language used in comics as opposed to language used in face-to-face interactions is worthy of scrutiny. Manes and Wolfson (1981) state that novels and play should not be used for pragmatic research because they prove to be unreliable sources and maintain that only ethnographic studies should be used for pragmatics research. At the same time, Saville-Troike (1989) points out "the communicative patterns which occur in literature presumably embody some kind of normative idealization, and portray types of people…in terms of stereotypical use of language" (p. 116). The current research considers literature and, more specifically, cartoons, to be an ethnographic source, tapped for their pragmatic value.

1.4.1 Comic Strips and the L2 Classroom

Numerous journal articles have been written on the benefits of introducing comic strips in education and, particularly, in language classrooms. For instance, Harrison

(1998) discussed how editorial cartoons and comic strips can be employed in university-level journalism history classes to illuminate the subject and impart a number of relevant lessons to NSs. Wright and Sherman (1994) discussed the attributes of daily comic strips that make them an ideal medium for language comprehension. After analyzing the readability of various comic strips available to learners and teachers, they argued that comic strips can be used effectively to build reading comprehension skills. In a subsequent article, Sherman and Wright (1996) introduced a teaching strategy using newspaper comic strips to promote higher level thinking. In a more recent article, Wright and Sherman (1999) argued that teachers can improve literacy, higher level thinking, and writing skills by encouraging students to combine words and pictures to create comic strips. They further asserted that if teachers want learners to become literate, critical, and creative thinkers, then they must align curricula, teaching strategies, and instructional resources. In the area of reading and writing, the task is to stimulate learners' thinking about explicit and implicit meanings conveyed by textual material.

When interpreting comics, the reader is primed for humor and anticipates an incongruity or switch that can cause the humorous script switch. Most learners are accustomed to the framework of comics, like canned jokes, and expect the forthcoming humor in the final panel of the strip. There is a finite number of scripts expected from a comic because the visual and linguistic information is limited. This genre differs from conversational humor, which requires real-time translation and attention to various

contextual factors. While this comedic context does not ensure that the comics will be funny, the genre can help limit erroneous or extraneous interpretations.

The visual details in each comic panel help to direct learners in selecting the intended interpretation. Chiaro (1992) states, "The punch is the pivot around which a joke is centered. Provided that the pragmatic signals telling them that a joke is on its way have been received, recipients expect a punch sooner or later" (p.49). Cartoonists have a set of conventions for conveying information about mental and physical states. Simple cues can be used to suggest complex feelings and emotions. The image of tiny popping bubbles, for example, represents drunkenness. Spoken language is typically shown inside a bubble made with a continuous line. A sudden idea may be shown as a light bulb lighting up over a character's head. Beads of sweat flying off a character can indicate anxiety or physical exertion. After one gains experience reading comics, these cues are processed readily; one is hardly aware of any effort. If learners have the general framework assumed by the authors, as in comics, then they can more easily comprehend a text and make the necessary inferences (Steffensen & Joag-Dev, 1984).

1.4.2 Comic Strips and L2 Acquisition

Comprehending cartoons entails the utilization of linguistic, cultural, and metalinguistic knowledge in order to comprehend the meaning of the text. Studies demonstrate the transfer of metacognitive strategies, such as linguistic reflecting and textual awareness, across languages. Awareness of the structural framework found in cartoons and comics can aid comprehension and should transfer across languages (Baker

& Brown, 1984; Hague, Childers, & Olejnik, 1988). Ousselin (1997) argued that teaching business culture and terminology requires a variety of pedagogical resources. He suggested that comic strips can complement textbooks and activities commonly used in L2 business courses. L2 learners bring to the act of humor comprehension their knowledge, strategies, and cognitive processes from their first language (L1) experiences. Therefore comic strips in L2 classrooms can guide students to hypothesize about the cartoon's language, increase pragmatic awareness, and emphasize underlying linguistic forms (Williams, 1995). This section has argued for the benefits of comic strips in the L2 classroom because they integrate humorous and figurative language. Perhaps cartoons can be used to achieve these goals and improve L2 comprehension of humor and related figurative language forms.

1.5 Language Play and the L2 Learner

Tarone (2000) recommends further examination and acknowledgement of the role of language play in L2 development. She suggests that language play may aid in the acquisition of sociolinguistic competence as learners experiment with different humor techniques, such as imitation or sarcasm. She also proposes that play with language form may make a contribution to L2 learning, explaining that the "IL [interlanguage] system could not develop unless the more conservative forces demanding accuracy were counterbalanced with more creative forces demanding innovation" (Tarone 2000, p.49). In other words, language play may help to destabilize the IL thus allowing growth to occur.

In his treatment of language play, Cook (2000) argues for the importance of language play for adults language learning, as well as for child language acquisition. He notes that, like children, adults spend a great deal of time involved in play and fantasy, through watching television, reading works of fiction, daydreaming, playing games, and using humor. He explores various explanations as to why humans might do this, rather than spend their free time doing nothing, and his review reinforces the idea that play has a central role in human development. Like Tarone (2000), he sees the elements of randomness (as seen in unpredictability) and creativity that are involved in language play as central to development, and suggests that language play be incorporated into L2 classrooms.

Ohta (1995) was among the earliest to demonstrate the role that language play can have in SLA. She observed two NSs of English in a university intermediate Japanese class, comparing their language use in teacher-fronted and pair interaction. She found that in the learner-learner context the two students became highly interactive, using Japanese for a wide variety of purposes not seen in the teacher-fronted interaction. Collaborative language play was one type of interaction she did not observe in teacher-fronted activities, but it occurred in peer communication. Ohta demonstrates that this language play allowed the learners to test hypotheses about the L2, which helped them progress in their language development.

Sullivan (2000) noticed the large amount of laughter that she observed in Vietnamese classrooms and examined L2 language play and its mediating role between

participants and language under study. In this class, the teacher and students created humorous collaborative narratives, and played with both the sounds and meanings of English words. Sullivan suggests that the playful L2 utterances served to raise the students' awareness of L2 form and meaning. Chiasson (2002) maintains that learners from classrooms where humor and laughter are present are not afraid to take risks. These learners are more confident and use the second language without fear of being ridiculed or criticized.

The potential to comprehend humor can empower the L2 learner in educational and social environments and, alternatively, the inability to comprehend and participate in humorous exchanges may result in feelings of social isolation (Paul, 1995; Spector, 1992). Kristmanson (2000) stresses the importance of an affective environment in L2 teaching and believes that by decreasing anxiety and stress, humor contributes to unity, learning, and a positive classroom atmosphere. This empowerment from humor can be introduced from the initial stages of language instruction and continued throughout a language program. In fact, Cook (2000) points to the pervasiveness of language play in human social interactions and calls for an element of play in all levels of language teaching. Schmitz (2002) believes advanced learners in ESL (English as a Second Language) and EFL courses should be instructed in the rules and structure of joke-telling and the function of jokes in different linguistic circumstances so that L2 learners can better assimilate into the target community.

1.6 Contribution of current research

There are at least three advantages to using humor comprehension as a probe of L2 learner's linguistic abilities. The first is ecological validity. Linguistic humor is a familiar and naturally occurring part of modern culture. Even in a laboratory or classroom setting, humor is 'real language' in that it has intent, as opposed to some of the citation forms or 'sample language' normally used for language assessment (Mahoney & Mann, 1992). This quality means that the learner's attention when reading comics is apportioned between content and form in approximately the same way that it would be when reading the same material in a non-test setting.

A second advantage is that humor comprehension requires no training and does not place direct emphasis on the awareness being tested. If training is necessary for testing, such as when the learner must name a series of items in a second language, the ability being measured is altered in the process of the experiment (Read, 1978). A third advantage is that humor is inherently more interesting and pleasant for both the subject and the experimenter. The participants are motivated and cooperative because performance of the task is its own reward (Mahoney & Mann, 1992). Schmitz (2002) states that

> There is, without any doubt, a need for research on the use of humor in language classrooms, but until there are sufficient studies based on experiments with humor in different teaching situations, with different levels of proficiency, different target and source languages, in different countries, most of the proposals and

recommendations will perforce be based on practical experience with humor and language teaching. (p. 96)

Moreover, Bell (2009) suggests that humor in the L2 classroom contains a social and physiological aspect that is beneficial for the learner. In this sense, humor creates a more amusing atmosphere, builds connections between learners who feel more at ease, and makes learning more enjoyable. Humor is also an excellent way to approach certain grammatical and linguistic elements and its use opens doors to a new world by giving a glimpse of the target culture

1.6.1 Pragmatic Competence and the L2 Learner

L2 research has recognized pragmatic competence, which includes humor as a component of communicative competence and should be a goal for any L2 or foreign language classroom, but there are relatively few data-based studies that examine how pragmatic ability can be developed in the classroom (Tateyama, Kasper, Mui, Tay, & Thananart, 1997). Bouton (1994) found that ESL learners enrolled at an American university without specific training in pragmatics improved in their interpretation of implicatures as length of stay increased, between 17 and 33 months for limited improvement and 4 years for all types of implicatures. Other studies have found no apparent influence of length of stay. For example, Warga and Schölmberger (2007) concluded that the apology production by learners of L2 French as measured by frequency of IFIDs (illocutionary force indicating devices) in a DCT, intensification, use

of upgraders, and pragmatic strategies demonstrated various outcomes: L2 development, non-L2-like development, and a lack of development after a ten-month stay.

In addition to implicatures and apologies, Billmyer (1990) addressed the effects of instruction on compliments and compliment responses, and followed the development of 18 adult Japanese learners of English over a 12-week period. Her results demonstrated that both the instructed and uninstructed groups exhibited an improvement in the use of the target speech acts. In order to investigate L2 requests, Rose (2000) employed an oral production task using a cartoon to collect requests, apologies and compliments from elementary school students. He found that the frequency of supportive moves, apologies, and compliments increased as the learners progressed in their studies. Similarly, Rose (2009), collecting L2 requests from secondary school students, reported significant evidence of pragmalinguistic development but little evidence of sociopragmatic development.

To test the effectiveness of explicit vs. implicit intervention, Koike & Pearson (2005) examined the effects of explicit and implicit interventions on the learning of Spanish suggestions and responses to suggestions. They created four experimental groups based on whether metapragmatic information was provided at the beginning and whether such information was explicitly presented through feedback during the treatment. Their posttest results revealed that learners who received metapragmatic information and explicit feedback as well as those who received only implicit feedback showed greater gains. Takimoto (2009) looked at the effectiveness of instruction for teaching polite

requests to Japanese learners of English. She found that the treatment groups, or those who received instruction, outperformed the control group, who received no instruction in the speech act. One important pedagogical outcome of these studies is the need for teachers to be aware that "effective learning occurs when the tasks provide learners with opportunities for processing both pragmalinguistic and sociopragmatic features of the target structure" (Takimoto, 2009, p. 22). Thus, the overall outcome of these studies is positive, as most of the features prove teachable to learners involved in the research (Tateyama, et al., 1997).

1.6.2 Humor Research and the L2 Learner

In addition to the L2 pragmatic studies presented above, L2 humor research has also contributed to the general discussion of pragmatic competence as it pertains to the L2 learner. Of the existing research on L2 humor research (Askildson, 2005; Bell, 2005, 2009; Forman, 2011; Richardson, 1989; Tuncay, 2007), the majority of studies have focused on spontaneous humor production, the ability of humor to facilitate L2 learning, and the pedagogical applications of humor in the L2 classroom; however, most have insufficient empirical data. Considering that humor comprehension is a complex area of pragmatic competence, similar to other pragmatic devices (such as implicatures, apologies, compliments, etc.), the study of L2 humor comprehension calls for a more thorough analysis.

Bell (2005) indicated that humor may be a marker of language proficiency and could result in deeper processing of lexical items by allowing semantic material to be

processed more deeply, thereby making them more memorable, yet her study was a case-study based on spontaneous conversations between learners. The current study continues this discussion by approaching humor comprehension from a linguistic standpoint with a larger sample size. Furthermore, instead of relying on spontaneous exchanges, learners' comprehension of humorous materials is analyzed.

Other studies include the ability of humor to facilitate L2 learning (Bell, 2005, 2009; Forman, 2011; Tuncay, 2007). Forman (2011) examined humorous language play initiated by a bilingual EFL teacher at a Thai university. He adopted a framework of verbal art in order to locate the use of humor in relation to both language play and creativity. His textual analysis addressed the notion of incongruity, as well as Bakhtin's 'carnival'.[4] In particular, Forman discussed Bakhtin's notion of speakers taking on characteristics of others' speech for humorous purposes. The verbal humor observed was identified as linguistic, relating to 'word play', and discursive, relating to social positioning. For students, benefits to learning were recorded in affective, sociocultural, and linguistic dimensions. His conclusions suggest that the 'unsettling' nature of humor when initiated by instructors during class time requires careful handling.

[4] According to Bakhtin, *carnival* is the context in which distinct individual voices flourish and interact together. The carnival creates situations where regular conventions are broken or reversed and genuine dialogue becomes possible. The notion of a carnival was Bakhtin's way of describing Dostoevsky's polyphonic style: each character is strongly defined, and at the same time the reader witnesses the critical influence of each character upon the other. That is to say, the voices of others are heard by each individual, and each shapes the character of the other. After Bakhtin and Dostoevsky, you should have years to refer to specific citations.

In contrast, Askildson (2005) surveyed language students and teachers by asking them to evaluate the use of humor in their classrooms. Results confirmed a perceived effectiveness for humor as an aid to learning and instruction. In addition, he asserts that humor can be used as a way of transmitting cultural clues to students. Drawing on various data types (interviews, participant observation and discourse analysis of audiotaped or videotaped interaction) collected from research projects involving the use and understanding of humor by L2 speakers in both classroom and non-classroom situations, Bell (2009) recommends pedagogical applications of humor in the L2 classroom. She discusses the appropriateness of humor in the L2 classroom and closes with suggestions for incorporating humor to guide learners' linguistic and sociolinguistic development.

While the studies mentioned above have greatly contributed to the study of L2 humor, the current study explores an untapped area of humor research. The processes and overall ability to comprehend humor lack evidence, as demonstrated by the studies discussed. Most L2 humor research has focused on spontaneous humor, rather than text-based humor and previous studies have focused on humor use in the classroom and its ability to contribute to humor comprehension, yet little research has been conducted on how much humor learners comprehend and the cognitive processes that aid comprehension. Therefore, this current examination of L2 humor moves beyond the pedagogical applications of humor and focuses on the overall comprehension of humor from a semantic-script switch perspective that focuses on the distinct features of linguistic-based humor. This study is the first to look at the comprehension of L2

linguistic-based humor in a cross-sectional study across four semesters, addressing both the overall comprehension of humor by year of study and the development of the four areas of linguistic-based humor.

The purported outcome of the current study is to show that a L2 learner's humor comprehension is a valuable, but often overlooked, window to cognitive processing. One hypothesis of this study is that as learners progress through language studies, their vocabulary deficits decrease, their word knowledge increases, and their metalinguistic awareness improves in conjunction with the ability to process implicatures. Therefore, it is expected that, as learners progress through a university-level language program, their overall comprehension of linguistic-based humor will also improve. Metalinguistic abilities such as grammaticality judgment, reanalysis of words, and understanding of ambiguity and metaphors are required in the appreciation of linguistic humor (Ashkenazi & Ravid, 1998; Bernstein, 1986). For the present discussion, 'metalinguistic knowledge' is defined by Roehr (2006) as "a learner's explicit or declarative knowledge about the syntactic, morphological, lexical, pragmatic, and phonological features of the L2" (p.183).

It is a basic tenet of L2 acquisition that learners must have some metalinguistic awareness of the linguistic units (phonemes, syllables, morphemes, lexicon) encoded within the orthography of the language in order to understand the language (Bialystok, 1988; Gass & Mackey, 2000). Furthermore, metalinguistic awareness of the ambiguous

nature of words, of sentences, and of pragmatics is a requisite to successful communicative competence (Mahoney & Mann, 1992).

1.7 Outline of dissertation

This chapter presented an overview of humor comprehension theories and humor categorization, calling attention to the specific nature of linguistic-based humor and identifying the voids in previous and current research. In the following chapter, humor is discussed as it relates to communicative competence, the comprehension strategies used to process L2 implicatures, and the usefulness of a qualitative and quantitative approach (Chapter 2). Following a review of the pertinent literature, the research design is described in detail (Chapter 3), and results and analysis from the quantitative and qualitative studies are presented and discussed (Chapter 4 and 5). To conclude, a final discussion of the theoretical and pedagogical implications of the research is presented along with caveats and calls for future studies (Chapter 6).

CHAPTER 2: REVIEW OF LITERATURE

The previous chapter addressed theoretical foundations of humor comprehension and placed humor theory within L2 classroom research. The current chapter will extend the discussion of L2 humor comprehension by situating it within a framework of L2 communicative competence. In addition, this chapter will address humor comprehension focusing on L2 reading research and comprehension strategies and will conclude with a discussion of the data collection methods chosen.

2.1 Communicative Competence and the L2 Learner

Sociolinguist and anthropologist Dell Hymes (1971) advocated the idea of communicative competence as an extension of the Chomskyan notion of linguistic competence. Hymes believed competence should incorporate not only that which is grammatically possible in a given language, but also that which is psychologically possible and socially appropriate. Unlike Chomsky (1965), Hymes endorsed both linguistic knowledge and the ability to use linguistic knowledge as components of communicative competence. Building upon Hymes' work with linguistic competence, a three-part theoretical framework for L2 communicative competence was proposed by Canale and Swain (1980) and consists of grammatical, sociolinguistic, and strategic competence. Eventually, Canale (1983) strengthened this framework by adding a fourth-component of discourse competence (formerly situated within sociolinguistic competence). A simple breakdown of the four areas is as follows:

Grammatical competence:	incorporates all the words and rules of morphology, syntax, semantics, and phonology
Sociolinguistic competence:	is the ability to use language appropriately by following the sociocultural rules of language and discourse
Discourse competence:	addresses the cohesion of sentences to form a coherent meaning within a dialogue
Strategic competence:	encompasses the appropriate use of communication strategies, especially when communication fails; these methods are often referred to as compensatory strategies (Canale, 1983; Canale & Swain, 1980).

These four components define the term 'communicative competence'. Within the realm of strategic competence lies pragmatics, which addresses a speaker's ability to use language according to the context in which the communication occurs and to a listener's ability to infer a speaker's intentions (Kasper, 1997). Thomas (1983, p. 92) defines pragmatic competence as "the ability to use language effectively in order to achieve a specific purpose and to understand language in context." Extrasentential concepts such as presuppositions, implicatures, speech acts, and general conversational strategies are now known as components of the field of pragmatics and have led linguists to look beyond the sentence (Raskin, 1987). Pragmatic competence is a vital component of native and non-native speakers' overall communicative competence and essential in the development of interactional ability in L2 learners. The more opportunities L2 learners have to witness and experience naturally occurring or authentic language both inside and outside the classroom, the more likely they are to be successful communicators, using language in a "socially appropriate" manner (Bardovi-Harlig & Mahan-Taylor, 2003).

Recent years have witnessed an increase in the body of research on the development of L2 learners' pragmatic competence (Bardovi-Harlig, 1999; Eslami-Rasekh, 2005; Kasper, 2001b; Kasper & Blum-Kulka, 1993; Kasper & Rose, 2002; Kasper & Schmidt, 1996; Koike, 2009). Many studies support the teachability of pragmatics and report on the benefits it provides for mastering speech acts, conversational implicatures, conversational management and pragmatic fluency. Incorporating feedback, whether it be explicit or implicit, in the language classroom is as essential as input and output in helping learners develop their pragmatic competence and their performance in various pragmatic acts (Koike & Pearson, 2005; Takimoto, 2009). In fact, most classroom research provides evidence on the benefits obtained via *explicit* metapragmatic instruction (Kasper, 2001a). Hence, language teachers would benefit from research done on L2 learners' acquisition of pragmatic language skills (Martínez-Fernández & Fernández-Fontech, 2008).

Studies of L2 pragmatics have so far dealt with a wide range of topics such as cross-cultural issues relevant in L2 teaching (Celce-Murcia, Dornyei, & Thurrell, 1997), the relationship between pragmatics and grammatical ability (Bardovi-Harlig, 1999; Koike, 2009; Takahashi, 1996), lexical pragmatics (Blutner, 1998), the role of stress, intonation and tone of voice as sources of potential implicatures (Gabrielatos, 2002), the role of pragmatics in the new media (Ho & Swan, 2007), pragmatic uses in L2 writing (Carson, 2001), the need to use authentic language in the classroom (Gabrielatos, 2002)

and those comparing the effectiveness of explicit intervention with that of implicit intervention (Koike & Pearson, 2005; Rose & Ng, 2001; Takahashi, 2001).

As learners become more proficient in their L2, they gain knowledge of the L2 pragmatic system and learn how to use the language appropriately and pragmatically. One crucial notion is the idea that all language learners, no matter how advanced in their language study, must *use* the language in order to develop, acquire, and retain their level of competence (Lee & VanPatten, 1995). According to Krashen and Terrell (1983), learners acquire a second language in much the same way they acquire their first language: by using it. For example, in a study of L2 bilingual classrooms, Fillmore (1982) found that learners: (a) engaged in largely individual activities; (b) interacted in their first language; (c) rarely conversed with the instructor; and (d) when interacting with the instructor, they rarely initiated or said much during conversations, relying instead on nonverbal means of communication. As a result, over a third of the students failed to learn English. Fillmore's study demonstrates that learners must actively use the L2 inside and, preferably, outside the classroom in order to develop their L2 competence. Within this framework, using a language includes speaking, listening, reading, and writing (Krashen, 1981, 1985, 1989, 1993).

In order to help learners improve their abilities in all four skill areas (reading, writing, speaking, and listening), language teachers must incorporate a variety of input and language practice for learners with the purpose of reaching as many learners on as many levels as possible (Hatch, 1983; Krashen & Terrell, 1983). If students have the

opportunity to work with various L2 materials in the classroom, they may become better interlocutors and better prepared when they interact in the 'real world'. Introducing learners to an assortment of L2 language examples (i.e. different genres, contexts, speakers, registers, etc.) can help accomplish the goal of language development and overall communicative competence.

2.1.1 Humor Competence and the L2 Learner

One goal in the study of linguistics is to discover the mental mechanisms underlying language use and to understand the ability of speakers to use natural language in a variety of interactions (Hymes, 1971; Raskin, 1987), including humorous ones. Within the field of humor studies, not only linguistic researchers, but psychologists, sociologists, anthropologists, philosophers, and a number of non-academics have investigated the various mechanisms and theoretical challenges that humor represents (Davies, 2003; Raskin, 1987). In a *Washington Post* interview, the chief executive of the language software company Rosetta Stone described his own language immersion experience: ''It was painful, it was kind of humiliating at times because you don't understand the jokes that are made about you'' (Lazo, 2009, p. A12). While native speakers may process conventional language in an automatized way, at times without much active thought about basic meanings and concepts (Gibbs, 1994; Giora, 2003), language learners process language differently. They are frequently unaware of standard meanings or default senses and thus may spend more time and effort processing than native speakers (Kecskes, 2000). Trying to construct multiple levels of interpretation for

jokes is virtually impossible for learners unless they engage in active metaphorical? thinking.

Kecskes and Papp (2000) argue that if learners acquire grammatical and communicative knowledge but fail to develop metaphoric knowledge in an L2, their language use will be significantly different from that of natives. Danesi (1993) concurs with this observation in commenting that even if students develop high levels of communicative proficiency but continue to think "in terms of the native conceptual system" (p. 490); using L2 words and structures to carry their own L1 concepts, they may be understood, but their discourse may be inappropriate or marked. Boers (2000) proposes a less ambitious goal in arguing for the need for learners to develop 'metaphor awareness' in the L2 so that they will, at least, be able to "organize the steady stream of figurative language they are exposed to" (p. 564). Littlemore (2002) suggests that "the ability to interpret metaphors quickly in conversation can be a crucial element of interaction" (p. 484).

As previously discussed, much of the research in the study of L2 applied linguistics is based on identifying the components that define communicative competence and humor should theoretically be considered one of these components (Davies, 2003; Vega, 1990). Danesi (1995) argues that L2 learners do not reach the fluency level of a native speaker until they have knowledge of "how that language 'reflects' or 'encodes' concepts on the basis of metaphorical reasoning" (p. 5). Previous studies (Kecskes, 2000; Wray, 2003) based on Conceptual Fluency may be developed in the classroom if students

are taught about the underlying cognitive mechanisms. It may be beneficial to expose L2 learners to metalinguistic concepts of the L2, teach them these concepts, expose them to L2 figurative and/or metaphorical language, and sensitize them to such concepts and such language during the process of L2 learning. Summarizing the views of international students interviewed about L2 humor, Morain (1991) reports that one respondent emphasized the importance of acquiring L2 humor proficiency: "If you are able to understand the humor, you can consider yourself bilingual" (p. 406). Although this may be considered an extreme view, Vega (1990) asserts that humor competence should be considered the fifth component of communicative competence. Vega (1989) indicates even highly proficient L2 speakers ''seem to systematically fail in the interpretation and production of humor'' (p. 26). The question still remains, however, regarding the *teachability* and *learnability* of underlying metaphoric language (Valeva, 1996; Kecskes, 2000).

Despite challenges, it is enormously valuable for L2 students to gain some level of L2 humor competence. Schmitz (2002) observes: ''Humor is part of . . . most social encounters; the use of humor and wit is intimately related to human nature'' (p. 90). A speaker's ability to understand humor and its implications demonstrates sophisticated linguistic, social, and cultural comprehension (Kamhi, Lee, & Nelson, 1985; Nippold & Fey, 1983). In fact, Solomon (1997) asserts, "Humor is probably the most difficult feature of another culture…Humor is the last frontier to be crossed in the complete understanding of another culture" (p. 205). Word play, irony, sarcasm, and jokes play a

fundamental part of any complete description of communicative and pragmatic competence.

In order to be considered competent in an L2, interlocutors must be able to use language appropriately in a variety of circumstances, which may only be achieved with a basic understanding of humor. Attardo (1994) acknowledges the necessity of including humor competence in the processing and production of humor within the framework of communicative competence. Appropriate use and comprehension of humor suggests an advanced L2 understanding because humor forces learners to confront literal and non-literal uses of language. This section has addressed the importance of humor within the communicative competence framework and the following section discusses the implementation of comprehension strategies with regard to humor comprehension.

2.2 L2 Cognitive Processing and Comprehension Strategies

In order for L2 learners to process and understand humorous implicatures in a foreign language, they must apply adequate comprehension strategies to aid humor processing. For the purposes of this dissertation, comprehension strategies indicate how learners conceive a task, how they make sense of the input, and what they do when they do not understand the input. In short, such strategies are processes used by the learner to enhance comprehension and overcome comprehension failures. A number of complex variables make humor comprehension processes used in the L1 different from those used in the L2. Koda (1989, 1994) identifies three conditions that distinguish L2 comprehension from L1 comprehension: (a) the influence of prior knowledge; (b) limited

linguistic knowledge; and (c) cross-linguistic effects. Understanding variations in learners' individual differences and learners' dynamic use and development in different languages are valuable in the field of L2 acquisition. In order to understand how learners can achieve a higher level of L2 comprehension, it is useful to investigate strategies that learners use when interpreting humorous implicatures in their L2 and how they utilize the L1 in appropriate arenas. The domain of L2 humor comprehension is a rich source for insights into L2 cognitive processing. Although more than 90 research studies have been conducted in the field of L2 cognitive processing, none of them have focused on linguistic humor comprehension.[5]

2.2.1 Bottom-up and Top-down Processing Strategies

Cognitive processing can be categorized into two main theoretical models: bottom-up and top-down. Bottom-up processing occurs when learners focus on letters in written language, sounds in spoken language, words, and/or phrases whereas top-down processing involves engaging prior knowledge and inferencing (Carrell, 1988; Gough, 1972). In other words, top-down processing uses background knowledge and previous experience of a situation, context, and topic to help interpret meaning (Goodman, 1968; Graesser, Singer, & Trabasso, 1994). When applied to language learning, L2 learners use prior knowledge and experience to anticipate, predict, and infer meaning with top-down processing (Carrell & Eisterhold, 1983, 1988; Gough, 1972).

[5] Education Resources Information Center (ERIC) in July 2010 http://www.eric.ed.gov.

By contrast, bottom-up processing relies heavily on decoding the sounds and letters of a language into words, clauses, and sentences. L2 learners then use their linguistic knowledge of phonological, semantic, syntactic, and lexical rules to interpret meaning. In this view, language learners work from the bottom to the top, using the sounds they hear and the letters they encounter, to identify meaning (Nunan, 1999). Bottom-up techniques evoked by incoming data approach reading as "a process of decoding written symbols into their aural equivalents in a linear fashion" (Nunan, 1999, p. 252). This form of strategic approach supports L2 comprehension in at least three ways: first simplifying information processing demands, then allowing for the intervention of problem-solving techniques, and finally providing for a sense of accurate comprehension by weaker L2 learners (Grabe & Stroller, 2002).

While bottom-up models treat the L2 comprehension process as a decoding activity with an emphasis placed on the structure of the text, top-down models take the opposite position and consider the learners and their interests, world knowledge, and deduction skills as the driving force behind L2 comprehension (Barnett, 1990; Goodman, 1968; Graesser, et al., 1994). A top-down (knowledge-based/conceptually driven) approach is based on a notion of general prediction, coupled with some form of association (Carrell & Eisterhold, 1988). Top-down processing is summed up in an explanation offered by Goodman (1968), who depicts the comprehension process as a "psycholinguistic guessing game" (p. 126) where the learners reduce their dependence upon the text itself by employing strategies such as predicting and sampling. In other

words the learner uses "general knowledge of the world or of particular text components to make intelligent guesses about what might come next in the text [and] samples only enough of the text to confirm or reject these guesses" (Barnett, 1989, p. 13).

2.2.2 Andersen's One-to-One Principle

In addition to bottom-up and top-down processing, learners may parse comics using Andersen's One-to-One principle. The One-to-One (1-1) principle "is a principle of one *form* to one *meaning*" (Andersen, 1984, p. 79; 1993). The One-to-One Principle states that "an interlanguage system should be constructed in such a way that an intended underlying meaning is expressed with one clear invariant surface form (or construction)" (Andersen, 1988, p. 117).

Andersen offers several pieces of evidence for this principle. First, learners of German, in the early stages, tend to maintain a subject-verb-object word order even though the German language under certain conditions requires placement of the verb before the subject, placement of nonfinite verb forms in clause final position, and placement of finite verb forms in final position in subordinate clauses. Second, in the acquisition of negation, learners of English, French, German, Japanese, and Swedish tend initially to place the negator before whatever entity is to be negated. For example, Stauble (1984) investigated the acquisition of English negation by Spanish and Japanese learners and found that although negation is preverbal in Spanish, but postverbal in Japanese, both groups of learners use preverbal negation in early phases of development and only acquire postverbal negation later. Similarly, in a study investigating the acquisition of

postverbal negation in Swedish by learners of 35 different source languages, Hyltenstam (1977) concludes that there is a universal tendency to place the negator preverbally. Only later do learners acquire the more complicated rules for negation formation that exist in each of these languages.

Finally, in the acquisition of target language temporal systems, L2 learners tend initially to restrict past tense morphology to punctual verbs. Only later is the morphology extended to verbs that are durative. For example, verb morphemes that in the target language mark pastness, anteriority, perfect and/or perfectivity first appear punctual/and or telic. Later they gradually spread to durative and atelic verb events (Housen, 1994). In other words, novice learners tend to assign one meaning to one form. More advanced language learners are capable of expanding their analysis beyond the initial and erroneous single associations and move into a stage characterized by reinterpretation (Bardovi-Harlig, 2007). In short, novice readers attempt to process language in a 'word-for-word' fashion, drawing on one type of knowledge – their neophyte knowledge of the language code (Hadley, 1990).

Andersen believes that one aspect of L2 development is the movement from the One-to-One Principle to the principle of multifunctionality. This development can be illustrated by the acquisition of English negation. Initially, learners place *no* before whatever they want to negate. This tendency frees them to notice that forms such as *don't* and *not* also express negation in English, and learners extend their negation to these forms as well. Andersen also exemplifies the movement to multifunctionality in the

acquisition of Spanish; the preterit form is initially restricted to punctual verbs. Later, learners extend the use of this form to verbs that are both punctual and durative and finally to completely nonpunctual verbs (Andersen, 1988).

2.2.3 Topic Familiarity and Background Knowledge

In addition to the various comprehension strategies and processing skills implemented by L2 learners, topic familiarity has been shown to affect text processing, comprehension, and lexical inferencing and gain (Barry & Lazarte, 1998; Carrell, 1987; Chen & Donin, 1997; Nassaji, 2002). There is evidence supporting the positive effects of familiarity and background knowledge with L2 text comprehension; specifically, that comprehension improves when readers possess prior knowledge of the topic (Barry & Lazarte, 1998; Carrell, 1987; Chen & Donin, 1997; Pulido, 2004, 2007). According to Nassaji (2007), knowledge emerges in the course of comprehension as the learner constructs a textbase primarily via bottom-up processing, or decoding, of the textual input. The text "becomes integrated into the reader's global knowledge, forming a coherent mental representation of what the text is about" (Nassaji, 2007, p. 90). In this view, the knowledge that guides comprehension is "generated through activation patterns initiated by the textual information and the progressive upgrading of previously established associations in the text" (Nassaji, 2002, p. 455). In terms of L2 comprehension, the role of background knowledge is largely determined by the quality of the textbase (that which is constructed during comprehension), which is affected by the individual's text-processing efficiency (ability with regard to word recognition and

syntactic processes, sentence parsing, and use of causal and rhetorical knowledge structures) (Pulido, 2004, 2007). All of these elements function in tandem in generating initial form–meaning connections for new words.

Research within a lexical inferencing paradigm (i.e. learners are asked to guess meanings of unfamiliar words, often through a think-aloud task while reading) has observed the strategies that L2 learners use to infer word meanings. Studies with advanced and intermediate ESL (Chern, 1993; Nassaji, 2002) and beginning EFL learners (Haastrup, 1989) illustrated that learners of all levels relied on background knowledge to guess word meanings during think-aloud protocols. However, Rott (2000), also using a think-aloud task, found that few intermediate learners of German used background knowledge during inferencing. Similarly, de Bot, Paribakht, and Wesche (1997) and Paribakht and Wesche (1993) reported that intermediate ESL learners referred less frequently to background knowledge than to grammatical knowledge during a retrospective think-aloud task. In a cross-sectional study, Lee and Wolf (1997) reported that native Spanish speakers used background knowledge the most to infer meaning, followed by the advanced, intermediate, and then beginning learners of Spanish during a retrospective think-aloud task. Finally, these introspective accounts generally illustrated beginning learners using background knowledge to a lesser degree, whereas several studies demonstrated advanced learners using it more frequently.

The role played by background knowledge in the reading process can be explained via the theoretical model of schema theory (Anderson & Pearson, 1988;

Rumelhart, 1980). According to Anderson and Pearson (1988), schemata are abstract knowledge structures that represent information among component parts and house a collection of previously acquired and integrated information. The schemata, similar to the scripts discussed in the previous chapter, are also referred to as background knowledge and represent general concepts of a given object, event, or situation. To illustrate the power of schemata, Carrell and Eisterhold (1988) offer the following example: "The man held up his hand and stopped the car" (p. 77). While there are several potential schemata related to this sentence, learners could make the following assumption: the car has a driver, the man (a policeman) signals for the driver to stop, the driver applies his brakes and stops the car (Gascoigne, 2005). Given different background knowledge and/or activation of a different schema, interpretation of this text could be quite different.

2.2.4 Metacognitive Awareness

Research in the area of L2 comprehension has also begun to focus on the role of metacognition. While previous research has focused on strategy use, researchers are examining learners' awareness of strategies used during comprehension; namely, their metacognitive awareness. Metacognition is a relatively new label for a body of research that addresses learners' knowledge and use of their own cognitive resources (Garner, 1987). Metacognitive knowledge or awareness is knowledge about ourselves, the tasks we face, and the strategies we employ (Baker & Brown, 1984). Knowledge about ourselves may include knowledge about how well we perform on certain types of tasks or our proficiency levels. Knowledge about tasks may include knowledge about task

difficulty level. For example, in the area of reading, the learner may know that familiar-topic material is easier to understand than unfamiliar material; explicit sentences assist in tasks that require reduction of texts to their general ideas. In terms of strategies, learners may know that verbal rehearsal and elaboration of material assist in retrieval, or that prediction of content based on titles improves comprehension, and so forth. Metacognitive awareness, therefore, also involves the awareness of whether or not comprehension is occurring, and the conscious application of one or more strategies to correct comprehension (Baumann, Jones, & Seifert-Kessell, 1993). For the purposes of this study, metacognitive awareness is conceptualized as the "knowledge of the readers' cognition relative to the reading process and the self-control mechanism they use to monitor and enhance comprehension" (Sheorey & Mokhtari, 2001, p.423).

Two dimensions of metacognitive ability have been recognized: (1) knowledge of cognition or metacognitive awareness; and (2) regulation of cognition, which as stated, includes the learners' knowledge about their own cognitive resources, and the compatibility between the learners and the L2 input. For example, if a learner is aware of what is needed to perform effectively, then it is possible to take steps to meet the demands of an L2 situation more effectively. If, however, the learners are not aware of their limitations as learners or of the complexity of the task at hand, then they can hardly be expected to take actions to anticipate or recover from difficulties (Carrell, 1989).

Some studies have shown that more skilled learners are also better strategy users. Carrell (1989) for example, conducted a study to investigate the metacognitive awareness

of learners in both their L1 and L2, and the relationship between their metacognitive awareness and comprehension in L1 and L2 reading. Two groups of subjects of varying proficiency levels including 45 native speakers of Spanish enrolled at an ESL intensive program at a university, and 75 native speakers of English studying Spanish, were involved in the study. A metacognitive questionnaire was developed to elicit relevant information from subjects to tap their metacognitive awareness and judgments about silent reading in their L1 and L2. Subjects were also tested in both languages by reading a text in each one and then answering comprehension questions pertaining to the text. For reading in the L1, local reading strategies such as focusing on grammatical structures, sound-letter, word meaning and text details tended to be correlated negatively with reading performance. The ESL group, at a more advanced proficiency levels, tended to be more global (used background knowledge, overall text knowledge, and textual organization) or top-down strategies in their perceptions of effective and difficulty-causing reading strategies. On the other hand, the L2 Spanish group, at lower proficiency levels, tended to be more local or bottom-up, perhaps because they may have been more dependent on bottom-up decoding skills.

Given the above discussion, there appears to be a strong relationship between reading strategies used by readers, metacognitive awareness, and reading proficiency. In essence, successful learners appear to use more strategies than less successful learners and also appear to use top-down comprehension strategies more frequently. Better learners also have an enhanced metacognitive awareness of their own use of strategies

and what they know, which in turn leads to greater comprehension ability and proficiency (Baker & Brown, 1984; Garner, 1987).

2.2.5 L2 Learners' Comprehension Strategies

The most recent set of L2 comprehension models is the interactive group, in which comprehension is considered the result of bottom-up and top-down elements working in concert; an interaction between the learner and the textual material (Bernhardt, 1991; Eskey, 1988; Grabe, 1991; Rumelhart, 1980; Swaffer, Arens, & Byrnes, 1991). Although interactive models acknowledge the effect of textual information on the learner's mental activities, many assign slight importance to top-down strategies such as metacognition (Bernhardt, 1986), the compensatory capacity of interest and background knowledge (Coady, 1979), and schemata (Anderson & Pearson, 1988). According to studies based on Schemata Theory, comprehension is the result of a union of the text and the learner's background knowledge (Lally, 1998). Specifically, textual input is mapped against existing schema and all aspects of that schema must be compatible with the input information (Carrell & Eisterhold, 1988).

Most L2 researchers agree that skilled learners employ a combination of bottom-up and top-down processes, fostering an interaction between the reader and the text (Eskey, 1988; Grabe, 1991; Swaffer, et al., 1991). Bottom-up processing is "evoked by the incoming data [and] the features of data enter the system through the best fitting, bottom-level schemata" (Carrell & Eisterhold, 1988, p. 76). Top-down processing occurs as the learner "makes inferences based on schemata and scans the input for information to

match the partially satisfied, higher order schemata" (Lally, 1998, p. 271). In general, top-down processing allows learners to make inferences, to perceive or predict more information than that which is contained in the data. Comics and cartoons provide many examples of top-down processing. For example, little cartoon water droplets do not contain the information that a character is working hard; learners add that information based upon previous experience and knowledge of the conventions of cartooning.

The skilled L2 learner should be equipped to implement the strategies and textual processing skills discussed above. Singhal (2001) concludes that successful learners tend to use cognitive, memory, metacognitive, and compensation strategies far more than less proficient learners. Additionally, these learners are better able to use comprehension strategies and processing skills from their L1 by utilizing prior knowledge, deciding whether a lexical item is key to the overall meaning of the passage, reanalyzing sentences, and processing the meaning of needed words through the use of syntactic and semantic clues (Block, 1992; Carrell, 1987; Hosenfeld, 1977). The model of L2 vocabulary processing during L2 comprehension by de Bot, Paribakht, and Wesche (1997) describes subprocesses that serve to activate various scripts when connecting a new lexical item to its semantic and syntactic specifications. For example, upon recognizing unknown words, skilled learners can use the activated semantic information about meaning relations and semantic fields, and pragmatic information about conventional and contrastive uses of words and expressions to interpret meanings of unfamiliar words. When processing the new words, learners can use morphological

information to obtain clues about word class, word meaning components, grammatical function, and semantic roles. During sentence parsing, learners can use syntactic information to identify semantic information and roles of new lexical items (Pulido, 2004, 2007). When a word's semantic value is unknown, new meanings may emerge by implementing the processes described above.

Skilled learners also tend to show more reaction to L2 information, such as acceptance, rejection, or doubt. In an L2 study, Hosenfeld (1977) used a think-aloud procedure to identify relations between certain types of comprehension strategies and successful or unsuccessful L2 reading. The successful learner kept the meaning of the passage in mind while reading, read in broad phrases, skipped inconsequential or less important words, and had a positive self-concept as a learner. The unsuccessful learner lost the meaning of the sentences when decoding, read in short phrases, pondered over inconsequential words, seldom skipped words as unimportant, and had a negative self-concept (Hosenfeld, 1977). Pulido's (2004) study of lexical gains through reading, found that the following combination of bottom-up and top-down processes aided her students: (1) discerning unknown or unfamiliar words, thus recognizing that there is a gap in comprehension; (2) inferring meaning from the context using linguistic, extralinguistic, or background knowledge; and (3) forming connections between the new lexical forms and their meanings and associating the new words with previous knowledge (p. 181). Barnett (1989) examined the comprehension strategies employed by native English speakers studying French and found that the successful learners tend to process an entire

passage then return to reread, think about what they know about the topic, hypothesize about what might come next, and guess the meaning of unknown words. Less successful learners focus on the meaning of individual words, pay attention to text structure, reread isolated difficult passages only, never or rarely hypothesize, and resist skipping unknown words.

Other studies have shown that skilled learners tend to use more varied strategies than less-skilled L2 learners by employing a range of strategies and cognitive processes to aid comprehension (Taillefer & Pugh, 1998). These learners rely on various comprehension strategies while processing and analyzing a text. The competences included in this list are the same as the four fundamentals of communicative competence seen in section 2.1:

Grammatical competence	knowledge of morphological, syntactic, lexical, and phonological systems
Sociolinguistic competence	knowing what is expected socially and culturally by the composers of the L2 text
Discourse competence	the ability to understand cohesive devises such as pronouns, conjunctions, and transitional phrases to link meaning within and across sentences, as well as the ability to recognize how coherence is used to maintain the text's unity
Strategic competence	the ability to use a number of strategies to compensate for missing knowledge. In other words, skilled learners are more likely to guess or find contextual clues to determine the meaning of unknown words that seem critical to the meaning of the text (Brown, 1994; Canale & Swain, 1980; Scarcella & Oxford, 1992).

Competence in these areas assist L2 learners in completing a multitude of tasks in order to facilitate comprehension, from distinguishing tense from verb endings to

anticipating outcomes based upon personal experience and world knowledge (Gascoigne, 2005). Learners may also try to enhance comprehension by analyzing structure, words and/or sentences. Furthermore, skilled learners integrate prior knowledge by connecting words or expressions with something similar in the L1 and L2. These strategies can include skimming ahead, considering titles, headings, pictures and textual information, anticipating information to come, etc. (Grabe, 1991). Saricoban (2002) examined the strategy use of post-secondary ESL students and found that the successful learners engaged in predicting and guessing activities, made use of their background knowledge related to the text topic, guessed the meaning of unknown words, and skimmed and scanned the text. Less successful learners focused on individual words, verbs in particular. The less successful learners were concerned with the types of verbs used, their purpose in the text and the meaning they conveyed. Less skilled learners generally focus on local concerns such as grammatical structure, sound-letter correspondence, word meaning, and text details. Less proficient learners' strategies tend to be more bottom-up, reflecting a desire to treat L2 comprehension as a decoding process rather than as a meaning-making process.

Less-skilled learners concentrate almost exclusively on the identification and resolution of lexical problems. Thus, they fail to determine given word meanings that are primary to an overall understanding of the text (Block, 1986, 1992). A previous study by Martínez-Lang (1995) has shown that less-skilled learners rely heavily on bottom-up processing and view text as a "chain of isolated words, each of which is deciphered

individually", and also view themselves as someone who "approaches the text by concentrating exclusively on the combination of letters and words in a purely linear manner" (p.70). Less skilled learners believe they must know or understand every word in order to comprehend the given text (Tsai, Ernst, & Talley, 2010). They may be unable to attend to comprehension problems by failing to implement strategies and processes familiar to them in their L1 (Taillefer & Pugh, 1998; Tsai, et al., 2010). These learners tend to rely heavily on local problem-solving strategies, such as questioning the meaning of individual words and sentences, seldom integrating background knowledge with the text, and not focusing on the main ideas (Gascoigne, 2005).

This review does not suggest that bottom-up processing has no place in L2 text comprehension. There are valuable skills in this comprehension model, such as discriminating between sounds and letters, recognizing word order and suprasegmental patterns or structures, and translating individual words (Shrum & Glisan, 2000). In fact, Eskey (1988) emphasizes the importance of bottom-up strategies and is concerned that the promotion of higher-order strategies, such as predicting from context and the activation of schemata, may be too strong and warns that educators "must not lose sight of the fact that language is a major problem in second language reading, and that even educated guessing at meaning is no substitute for accurate decoding" (1988, p. 97). To demonstrate his point, Eskey offers the following sentence pair, employing the nonsensical invented term "stiggle": *Take three stiggles. Stick them in your ear*. Given that nobody knows what a *stiggle* is, and that there is no context or extra-linguistic cues

to suggest that *them* refers to *stiggles*, it must be the bottom-up textual structure of the language that allows readers to complete the anaphoric reference.

2.3 Humor Comprehension Assessment

To address the aforementioned comprehension strategy use, this study employed a cross-sectional design via a multiple-choice questionnaire and think-aloud protocol to examine L2 Spanish learners' linguistic humor comprehension as expressed in newspaper cartoons. In this way, it was intended that the nature of the skills required for understanding humorous implicatures could be determined. In regards to L2 testing, much has been written about the shortcomings of traditional assessment in forms such as multiple choice and cloze tests (Alderson, 2000). These product-oriented assessment methods are traditionally employed to gain insight into the learners' L2 comprehension abilities, but as Bernhardt (1991) demonstrated, this sort of assessment is not sufficient because it is unable to capture the complex processes that take place between learner and text. In order to remedy this problem, a new trend in comprehension assessment emerged that looked "more carefully at the authenticity of the assessment tasks and their alignment with current research, theory, and instructional practices" (Valencia, 1990, p. 60).

Previous studies on multiple-choice versus explanation-type (i.e. short answer and essay responses) questionnaires claim that multiple-choice tasks yield greater accuracy in determining comprehension than explanation tasks (Nippold, 1985, 1988). Nippold's (1985) work implies that learners may understand humor but may not have the cognitive or linguistic skill to explain it (Nippold, 1985). This finding is not surprising due to the

increased cognitive demands placed on learners while participating in a think-aloud or explanation-type protocol (Gibbs, 1987; Prinz, 1983). As Nippold and Rudzinski (1993) have pointed out, it is not easy "…to reflect upon the meaning of a lexical unit and to state explicitly what is known implicitly" (p. 735). There are further difficulties when one is reflecting on linguistic units in the L2. Therefore, the nature of the task (e.g. multiple choice vs. think-aloud) used to assess comprehension appears to affect results.

The use of verbal reports to investigate cognitive processes in psychology, cognitive science, and education is not a new data-elicitation procedure. This think-aloud method of data collection has been employed in studying other aspects of linguistic and humor development, especially in children (Leow & Morgan-Short, 2004; Slobin & Welsh, 1971). Indeed, this data collection technique has been enjoying quite a substantial increase in its importance for elucidating a clearer picture of the internal processes employed by adult and children language learners (Ericsson & Simon, 1993; Faerch & Kasper, 1987; Leow & Morgan-Short, 2004). A think-aloud study allows researchers the opportunity to access a rich source of untapped data. Think aloud studies involve participants thinking aloud as they perform a set of specified tasks. Users are asked to explain what they are looking at, thinking, doing, and sometimes feeling as they complete their task. This procedure enables observers to see first-hand the process of task completion, rather than only its final product, by allowing learners to make explicit what is implicitly thought as opposed to traditional methods of research that rely heavily on researcher inferences since the underlying process behind the choice cannot be heard;

only deduced (Gerloff, 1984). A think-aloud study allows researchers to listen to different stages of language processing as they occur and to infer meanings from the process itself.

Two forms of verbal reports claim to be the closest reflections of thinking or cognitive processing: (1) concurrent or introspective reports; and (2) retrospective reports. Introspective verbalization is gathered as participants are performing a task and is not constrained by memory (Leow & Morgan-Short, 2004). Retrospective verbalization is usually conducted immediately after some form of processing has taken place, either during specific breaks in the actual task or immediately after completion of the task. This form of think-aloud protocol has been critiqued for potential effects of memory constraints (Cohen, 2000; Leow & Morgan-Short, 2004; Nisbett & Wilson, 1977). The current study uses concurrent verbal reports as opposed to retrospective reports.

Think-aloud methods have been criticized for less than solid evidence of reliability and replicability. In addition, think-aloud studies have utilized dissimilar coding approaches across studies (Davison, Best, & Zanov, 2009). Critics also mention the possible incongruence between the investigator-defined coding schemes and the respondent's own conceptualization of their verbalized thoughts. Finally, subjects' reports on their mental processes may not be complete or they may be influenced by their perception of what the researcher 'wants' them to do (Zanov & Davison, 2010). Although there are drawbacks to a think-aloud protocol, this method has continued to be used as a research technique because it is well-suited to the task of providing the most direct access

to the mental processes involved in reading while it is occurring (Ericsson & Simon, 1980; Rankin, 1988).

The discussion of these different procedures suggests that using multiple data-collection procedures (in this case, a multiple-choice questionnaire and concurrent verbal reports) may greatly enrich our knowledge of how learners attend to humorous input. Designing a study that requires both assessment techniques will not only contribute two different sources of information but will also allow the comparison of the information obtained through each type of assessment. As Leow (2000) points out, exploring the learners' internal processes by means of multiple data-elicitation measures may offer the evidence necessary to understand better how participants go about completing a specific task.

2.4 Current Study of Humor Comprehension and Strategy Use: Research Questions

As shown in Chapters 1 and 2, humor comprehension is an area of L2 research that has not received adequate attention and should be investigated with empirical studies that can contribute to the discussion of L2 communicative competence. Humor comprehension is tightly linked to overall communicative competence and this study seeks to examine some of the strategies that learners implement when processing L2 humor. While the current study is strongly grounded in linguistic-based humor comprehension, it is hoped that the research presented can contribute to the overall discussion of L2 humor comprehension and communicative competence.

The current investigation is based on language-based humor play involving four linguistic categories, including semantics, morphology, phonology, and syntax. To guide this study, the following research questions are addressed:

Table 2.1: Research Questions

1) What is the overall comprehension of linguistic-based humor by L2 learners as shown in a multiple-choice and think-aloud format?
2) Is there an order of development in comprehension of the four linguistic-based humor types as shown in a multiple-choice and think-aloud format?
3) What comprehension strategies do learners implement while processing humor?
4) Is there a trend in errors (i.e. false cognates, etc.) committed during linguistic humor comprehension?

Part 1 of this study involves a qualitative and quantitative analysis of the responses from a multiple-choice questionnaire presented to 160 undergraduate L2 Spanish learners using linguistic-based humor in comic strips. The hypotheses for this part are that (1) overall comprehension of humor improves as learners progress through an L2 program, (2) there is an observable development of humor comprehension among the four linguistically-based humor types (phonology > morphology > semantics > syntax), and (3) the participants generally rely upon the L1 answers provided with a preference for bottom-up comments.

Part 2 presents a quantitative and qualitative analysis of the results obtained during a think-aloud protocol with 20 additional L2 Spanish learners using the same linguistic-based humor in comic strips, but without the L1 aids present in the multiple-choice answers from Part 1 of the study. The hypotheses for this analysis are that (1) overall comprehension of humor decreases without L1 answers available for reference by the participants, (2) if an order of linguistic humor development exists in Part 1, it is

duplicated in Part 2, (3) the learners successful in humor comprehension utilize a combination of bottom-up, top-down, and metacognitive strategies to comprehend humor whereas the unsuccessful participants rely primarily upon bottom-up and one-to-one processing strategies for humor comprehension, and (4) there is a clear distinction of error types committed between the successful and unsuccessful participants.

In summary, this investigation of L2 humor comprehension from an experimental approach (1) addresses the overall comprehension of humor across course levels, (2) discusses the developmental order of linguistic-based humor, (3) examines various strategies used by L2 learners while processing humor, and (4) addresses errors that successful and unsuccessful learners made while processing humor. The results are discussed following previous research on humor comprehension, communicative competence, and L2 comprehension strategies. This dissertation not only contributes to the discussion of L2 humor comprehension, but also to the broader fields of L2 communicative competence, language processing, and humor development.

Chapter 3 discusses the methodology used in the study. This chapter includes a rationale for the study design as well as a discussion of the data collection techniques. A description of the participants, the materials, and the testing procedures is discussed. The chapter concludes with a description of data coding and the analysis used to investigate the multiple-choice and think-aloud components.

CHAPTER 3: EXPERIMENTAL DESIGN AND METHODOLOGY

In order to answer the research questions presented in Chapter 2, an experimental design was devised to examine L2 linguistic humor comprehension. I discuss the participants, materials, and procedures used in the study. Then, the means of data coding are summarized. Finally, an overview of data analysis techniques is detailed.

For the present study, the experimental design is a mixed method that integrates qualitative and quantitative research. This type of design begins with quantitative methods that are enhanced with qualitative measures of cognitive processes and outcomes. For the multiple-choice questionnaire, a quantitative analysis of learner comprehension is performed considering the large number of participants in the study. Quantitative data improve the design by providing insights into how much and which types of humor are best comprehended by the participants. The quantitative method identifies the overall comprehension levels by course and linguistic humor type; however, the quantitative method has limited explanatory power. In other words, little information is gained about how the participants process humor and the strategies they use to make connections when the quanitative method is used exclusively.

The think-aloud study protocol, developed by Newell & Simon (1972), allows a closer look at L2 cognitive processing. Therefore, a qualitative analysis is performed to lend insight into the cognitive processing of humor comprehension in L2 learners. The qualitative design provides rich information about learners and cognitive processing, but the information about what works in comprehension is more subjective and cannot be

generalized as easily as the quantitative data. In combining the two methods, the current research obtains added insight into humor understanding. The quantitative method describes *what* was understood and by whom, while the qualitative method reveals *how* it was understood.

3.1 Multiple-Choice Questionnaire

3.1.1 Participants of the Multiple-choice Questionnaire

Four groups of L2 Spanish language learners from the University of Texas at Austin participated in the study, all with English as an L1. For the multiple-choice questionnaire, all 160 participants took the survey during the 12th week of classes in the spring of 2007. Each of the 160 learners saw 14 comic strips during an online questionnaire designed to elicit, through a multiple-choice comprehension task, a response regarding why each comic was understood to be humorous. There were 2,240 responses in total.

The researcher was present during data collection, but was not an instructor of the courses. All participants were informed that the questionnaire was voluntary and they could opt out of the study at any time. Although the students were given as much time as they needed (up to 50 minutes of class time), administration of the questionnaire required approximately 20 minutes for each group regardless of course level. The questionnaire was completed during class time to ensure that the project would not be compromised in any way.

The original pool of subjects included 180 students enrolled in eight sections of an undergraduate Spanish program, spanning first- through fourth- semester lower-division courses. To address the progression of humor comprehension, two classes from each of four different Spanish courses were randomly chosen for the investigation. In addition to the comic questionnaire, personal information was obtained by means of a survey that was filled out by each participant at the beginning of the study (see Appendix 4). Information regarding gender, year in school, dominant language, and current Spanish course level was requested, as presented in Table 3.1.

Table 3.1: Background information of Participants from Multiple-choice Questionnaire

		1st Semester	2nd Semester	3rd Semester	4th Semester
Year	Freshman	9	6	7	6
	Sophomore	24	15	3	14
	Junior	17	11	18	18
	Senior	11	4	12	4
	Graduate	0	0	1	0
Sex	Male	27	20	16	13
	Female	34	16	25	29
Dominant Language	English	60	34	41	41
	Other	1	2	0	1

This background questionnaire administered at the beginning of the experiment sought to ensure that the pool of subjects represented naïve L2 language learners who had not been exposed to Spanish in their home environment. The background questionnaire eliminated four subjects with a dominant language other than English[6] and an additional sixteen were excluded because they did not complete the questionnaire, leaving a total of 160 participants. All participants learned Spanish in a classroom setting. Table 3.2 shows the levels and populations of the final groups tested.

[6] The additional languages include: Spanish, Farsi, and Japanese.

Table 3.2: Participants from Multiple-Choice Questionnaire by Course Level

Course Level		Total Participants
First-Year	First Semester	53
	Second Semester	29
Second-Year	Third Semester	39
	Fourth Semester	39
Totals		160

Table 3.2 illustrates the total number of participants across course levels. As the numbers reveal, the largest participant group included first-semester learners. This distribution was not intentional as only two groups of first-semester learners participated in the study. Due the number of participants in the questionnaire, a proficiency exam was not deemed necessary. Although there may have been higher and lower performing students at each course level, the total number of learners at each course level was thought to represent a median proficiency for that course. Therefore, participants were not categorized by proficiency ratings; instead, they were categorized by placement in the semester of L2 study.

3.1.2 Materials

In conjunction with the background survey presented in Table 3.1, each learner completed an online questionnaire (hosted by surveymonkey.com) based on comic strips depicting each of the four linguistic humor areas. The comics were found through an online search of newspapers, web pages, and comic strip databases. The texts were 14 comic strips culled from Spanish-speaking countries (Argentina, Chile) as well as translated comic strips that were originally published in English (from the United States

and Australia).[7] The comic strips that were translated from English to Spanish were published as such. It should be noted that certain types of humor can be harmful or offensive to others (Hamersky, 1995). Care was taken not to mock or use humor that would be offensive or hurtful to others of a different race, culture, gender, or any other type of social difference.[8] The goal was to find comics that encouraged *laughing with* rather than *laughing at* the characters in the comic. These comics were chosen because they did not create special linguistic or conceptual demands specific to Spanish or English. In other words, the comics could be translated from one language to the other without changing the meaning or interpretation of the humor.

In addition to choosing more familiar texts, all items were classified according to their linguistic elements. Each comic strip addressed one of the four linguistic categories involved: (1) the *semantic* group, which includes items based on lexical or word-based humor; (2) the *morphological* group, which addresses morphological humor, or the internal structure of words; (3) the *phonological* items, which are based on minimal pairs, metathesis, or stress/juncture; and (4) the *syntactic* items, which center on phrase structure or transformational ambiguity. Each comic incorporated one type of linguistic humor and was presented randomly without regard for linguistic-humor categorization.

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[7] All comics and their sources are available in Appendix 1: Comics.

[8] While care was taken to chose comics that would be considered inoffensive, it proved difficult to find comics that would be considered completely devoid of cultural content. As all participants were from a similar background (i.e. raised in the US by English-speaking parents), a more or less homogeneous American background was assumed for comprehension of the comics.

Two to four items were selected for each linguistic element. It was decided that no more than four items in one category would be used because it could frustrate and discourage students if there was an overload in one humor category, especially for learners who have difficulty comprehending humor (Hamersky, 1995). Due to the strict definitions of linguistic-based humor, only two comic strips accurately and appropriately portrayed semantics-based humor. The other three areas (phonology, morphology, and syntax) were reflected by at least three comics in their respective areas.

After the initial questions about their language background, the humor questionnaire was presented to the participants. An example of a syntax-based comic strip can be found in Comic 13: "Horns".[9]

Comic 13: "Horns"[10]

Please choose the most appropriate answer to each of the following questions. It does not matter if you find the comic funny. If you think more than one answer is possible, choose the one that makes the most sense.

[9] All comics and their corresponding titles can be found in Appendix 1: Comics.
[10] Translation of words on rock: *Ask Rizos*
Question: Why aren't aggressive people good at bull-fighting?
Answer: Because they like to take the bull by the horns.

This comic is funny because _____

a) Rizo's information station can't answer the question on bull-fighting.
b) In bull-fighting no one should grab the bull's horns.
c) Aggressive people would be very good bull fighters.
d) Rizos suggests that the man grab a hold of the bull instead of bull fighting.
e) I don't know because _____

Participants were instructed to choose the most appropriate multiple-choice answer, regardless of whether they found the comic humorous. They were also instructed to write an answer if they did not find the multiple-choice options to be adequate.

3.1.3 Procedures

The surveys were administered in Week 12 for the multiple-choice component. All items were administered in one session. The directions, written and explained in English, stressed that results from the questionnaire would not be reported to instructors; however, students were encouraged do their best, leaving no question unanswered even if they had to guess. In addition, it was explained that the questionnaire was not designed to test for 'comicity'. In other words, it did not matter whether the participant found the humor to be funny, but rather the questionnaire was designed to assess the participants' ability to comprehend the humorous implicatures. An example of the text read to students during the multiple-choice questionnaire is seen in Script 3.1:

Script 3.1: Multiple-choice Script Read to Participants[11]:

> You are being asked to participate in a research study. I would like to ask you to help me by answering the following questions concerning foreign language humor comprehension. This survey is being conducted for doctoral research in the Department of Spanish and Portuguese at the University of Texas at Austin to better understand which comic strips Spanish learners "get". **This is not a test. So there is no "right" or "wrong" answer and you do not have to write your name on it.** Please give your answers honestly as only this

[11] For a complete version of the IRB form, refer to Appendix 2.

> will guarantee the success of the investigation. The responses that you give in this questionnaire will be kept confidential. Thank you for your cooperation; however your participation is entirely voluntary. You can stop your participation at any time and your refusal will not impact your current or future relationships with UT Austin or your instructor. To do so simply tell me you wish to stop participation. I will provide you with a copy of this consent for your records.[12]

After the students listened to the script, they saw a 14-item multiple-choice recognition questionnaire that was placed on the website www.surveymonkey.com. Participants accessed the website anonymously during class time in a campus computer lab. During the online questionnaire, learners were presented with a multiple-choice survey containing four possible answers as well as a written response section in which they could answer the question: "*I don't know because…*". Participants could choose one from among four possible options that they believed best described the humor of the comic or they could fill in their own answer. All answers were presented in English. The average amount of time spent on the online questionnaire was 20 minutes. The participants had a maximum of 50 minutes to complete the questionnaire, but none of the learners spent longer than 25 minutes.

A multiple-choice questionnaire was chosen as the initial form of data collection in order to generalize results from the sample population (the L2 participants) to the general population (all L2 learners). This portion of the study sought to (1) sample the material broadly, (2) discriminate between course levels, and (3) provide a means of quantitative analysis. Farr, Pritchard and Smitten (1990) found that regardless of the overall strategies used, test takers focus on a search for information to answer multiple-

[12] See Appendix 2 for a complete IRB consent form.

choice questions, "using the questions [themselves] to direct a search of the passage to locate the best possible information" (p. 209). They argue that the multiple-choice test is a special kind of task and support the construct validity of the multiple-choice test for at least one type of reading, which is reading for specific information (Farr, et al., 1990). The current multiple-choice questionnaire had the same introduction to each item tested (see Comic 13: "Horns") and the participants could use the questions to search for information in the text (i.e. comics). In other words, the participants could use the L1 multiple-choice answers to aid in comprehension. The multiple-choice questionnaire proved to be a valid and reliable data source to determine the types and amounts of humor understood by participants.

3.1.4 Data Coding and Analysis

To measure the ability to recognize a punch line, participants completed a multiple-choice test. They included four possible English (L1) translations and a fifth option ("I don't know because…"). Among the four L1 options was the correct interpretation of the punch line and three distracters. The distracters were categorized to avoid repetition and to increase the validity of answer choices. Each of the distracters conformed to at least one of the following criteria: (a) orthographically or phonologically approximate to a lexical item in the L1 or L2; (b) idiomatically approximate to a known phrase or colloquial expression in the L1 or L2; and/or (c) schematically appropriate based on the artwork or within the framework of the comic. Comic 6: "Donkey" is used as an example to demonstrate the various types of distracters found in the questionnaire.

Comic 6: "Donkey"[13]

Please choose the most appropriate answer to each of the following questions. It does not matter if you find the comic funny. If you think more than one answer is possible, choose the one that makes the most sense.

This comic is funny because _____

Distracter Type	Answer Choice
Orthographic or Phonological Distracter	a) The son is making fun of his father's ability to hear
Idiomatic Distracter	b) "Donkey Jote" is the title of a recent novel
Schematic Distracter	c) The son is trying to get his father to write his book report for him
Correct Answer	d) The son thinks he is very clever by making fun of Cervantes' book
Written Response	e) I don't know because _____

The correct option to Comic 6 is answer choice D, with options A-C serving as distracter choices. In order to comprehend Comic 6, the learner must be able to identify a manipulation of stress in the lexical items *Donkey Jote*. The humor is created by the unanticipated stress placed on the words, *Donkey Jote* (Don Quijote). Data from a pilot study demonstrated that the answer choices were too transparent if they included the

[13] Son: Dad, how do you spell "Donkey"?
Father: D…O…N…K…E…Y Are you studying animals?
Son: No, it's for a report on Cervantes
Father: I'm sorry, but…what does "Donkey" have to do with Cervantes?
Son: A lot, Dad, haven't you ever heard of "Donkey Jote"?

exact wording of the final frame. Therefore, the final questionnaire answer choices were written with idea that learners would be required to choose the most logical answer choice. A panel of advanced and native Spanish-speakers contributed to writing the answer choices along with the distractors. An additional group of native and near-native speakers took the multiple-choice questionnaire to ensure reliability and accuracy.

In reference to Comic 6, option A is an orthographic or phonology-based distracter because it refers to the word *oido*, which is used in the comic as the past participle 'heard'. The word *oido* can also be used to reference an 'ear'. Therefore, the first option is referencing the idea of *oido* as an 'ear' or as the verb 'to hear'. The idiomatic distracter, used in option B, is placed in quotation marks, which may lead the reader to believe that *Donkey Jote* is some type of known phrase in the L2. Finally, option C is a schematic distracter because it relies on the illustrations to distract the reader. There is no reference in the written text that would lead one to believe that the son wants his father to write his report, but the expressions on the son's and father's faces could lead an inexperienced learner to believe that this choice is the correct one.

In addition to the multiple-choice answer and distracters, a written response category was included because, if a respondent left the question unanswered, it is difficult to determine whether the omitted answer is a conscious decision or an accidental one (Dornyei, 2003). Therefore, the questionnaire offered an additional option, in which participants had the opportunity to write a response instead of choosing a multiple-choice answer. That is, in response to the initial question, "Why is this funny?", the learners

could choose from among the four answers provided or they could complete the prompt, "I don't know because…". With the written response option, the participants could write individualized answers as to why the comic was funny or clarify why they did not understand. Although the majority of participants chose one of the multiple-choice answers, between 9 and 45 participants chose to write a response.[14]

Henceforth, these comments are referred to as "written responses" to differentiate them from the multiple-choice answers found in the questionnaire. These responses facilitate the multiple-choice data because they provided insight into learners' thought processes while taking the questionnaire. Each of the comments was codified and placed into a Comment Category. Each comment was categorized, and the data were codified into 5 comment types. Each of the comment types is explained below with examples from the written response section.[15] Each of the comments is in reference to Comic 13: "Horns".

Table 3.3: Comment Types, Definitions and Examples from the Written Response Section to the Online Questionnaire

Comment Type	Definition	Participant Examples
Individual Word Focus	The participant concentrates on a particular word.	"I dont know the meaning of Cuernos" "I don't know what '*torear*' means."
General Reference to Vocabulary or Grammar	The participant comments on the text or their own vocabulary or grammatical knowledge.	"I don't understand the vocab or grammar."

[14] If a participant correctly described the humorous implicatures in their written response instead of choosing the correct multiple-choice answer, their response was coded as correct.

[15] The comments appear as the participants wrote them. They have not been altered in any way. If there are grammatical, orthographic, or other errors, they were recorded by surveymonkey.com and these errors are represented in the data accordingly.

		"There are a few words I do not know in this comic, so I was not able to understand it"
Phrasal Focus	The learner does not understand the meaning of the final frame or final, humorous phrase of the comic.	"I don't understand the punchline"
Inference or Associative Comment Utilizing Prior Knowledge	The participant interprets the text, forms a hypothesis, or uses general knowledge to make associations with information in the text.	"I would say this comic is funny because of the reference to the saying grab the bull by the horns." "What bull are you talking about? I don't even see a bull, but there is the word *toro* however..."
Evaluative Comments on Process	The reader describes strategy use, indicates awareness or unawareness of components of the process.	"Is this perhaps a play on words that I would not understand because I do not speak Spanish as well as the audience the illustrator drew this for?" "I don't understand."

As Table 3.3 demonstrates, there are five types of comments from the written response section. When the participants chose to write a response, their answer was coded and placed into one or more of the categories listed above: Individual Word Focus, General Reference to Vocabulary or Grammar, Phrasal Focus, Inferencial or Associative Comment utilizing Prior Knowledge, and/or an Evaluative Comment on the Process.[16] Most of the learners' responses were placed into one of the five categories; however, a participant could write a lengthier comment that comprised more than one comment type. In this case, one written response token could encompass more than one comment type

[16] One learner, participant FA(147), was eliminated because she wrote an identical answer for all written responses. Her answer to the written response was, "i dont know Spanish".

categorization. For example, learner FA(184)[17] states, "I do not know what *cuernos* means. Is this perhaps a play on words that I would not understand because I do not speak Spanish as well as the audience the illustrator drew this for?" In this example, learner #184 initiates her written response with an individual word focus ("I do not know what *cuernos* means."), but then questions the humor and her language processing, thereby writing an evaluative comment on the process ("Is this perhaps a play on words that I would not understand because I do not speak Spanish as well as the audience the illustrator drew this for?"). Therefore, her comment token is comprised of two comment types: an Individual Word Focus and an Evaluative Comment on the Process.

This answer option was also provided in order to give the participants the chance to explain the punch line without using one of the multiple-choice options. For example, MA(187) wrote, "I would say this comic is funny because of the reference to the saying grab the bull by the horns". This learner correctly identified the punch line of the comic strip and the answer was coded accordingly.

There were a total of 253 written responses, but a total of 301 comment tokens. After the comments were categorized into comment types, they were further analyzed to determine whether comment type significantly correlated with the year of study and linguistic humor type. After the survey was complete, a quantitative analysis was carried

[17] This series of letters and numbers is a means to identify the participant: the first letter is to clarify M(ale) vs. F(emale) learners, the A vs. B refers to their grouping (A is first year and B is second year) in the Spanish language program, and the final number in parenthesis is the participant number assigned to each individual by surveymonkey.com. These numbers were retained for identification purposes because they allowed the researcher to ensure that the participant did not respond identically to each question. These numbers do not identify the actual participant who completed the survey.

out to test the hypotheses via a two-way repeated measures ANOVA using SPSS software. The course level (1st – 4th semester Spanish) served as the between-subjects variable and the linguistic humor types (semantic, phonological, morphological, and syntactic) served as the within-subjects variable. Each participant had the opportunity to see each comic strip; therefore, a within- and between-subject ANOVA was conducted. Two F-factors are discussed in Chapter 4: (1) the overall comprehension between course and (2) levels of the overall comprehension of linguistic humor types. These two dependent factors are addressed individually with respect to the learner responses.

The following section addresses the experimental design and methodology of the Think-Aloud Protocol.

3.2 Think-Aloud Protocol

3.2.1 Participants

Apart from the multiple-choice questionnaire group, 20 additional students with similar background profiles (i.e. undergraduates from English-speaking homes) participated in a think-aloud protocol in which they read for the first time the same comics as the participants of the online portion (without the multiple-choice options) and discussed their comprehension. Only volunteers who had not participated in the multiple-choice questionnaire portion of the experiment were asked to participate in the think-aloud component. Therefore, none of the current participants had taken the multiple-choice questionnaire, and all were unfamiliar with the individual comics shown during the think-aloud protocol. To locate subjects for the think-aloud interviews, the researcher

approached numerous lower-division Spanish language classes in the Spring and Summer of 2007 and requested volunteers to take part in a humor study. The basic study design and rationale was described to the class. Each student who volunteered was individually contacted via e-mail to set up a specific time to take the questionnaire. They received no compensation or reward for participation in the study.

The same instructions were presented to the participants of the think-aloud protocol, but they did not have access to the multiple-choice answers because this portion of the study aims to determine learner comprehension without the aid of L1 answers. For the think-aloud protocol, testing was completed with the comics in the same order as the multiple-choice questionnaire. Each learner was tested individually in a private room with the researcher. The sessions were audio-taped, and learner identities were kept anonymous. Learners completed the same language background and basic information survey as the multiple-choice questionnaire participants but were asked to 'talk aloud' while answering the questionnaire. The participants were asked to read the comic aloud in Spanish and then explain what was understood in L1 English or L2 Spanish. Subjects were instructed to say whatever came to mind as they read each comic and encouraged to discuss what they understood as well as how they understood it.

Prior to the comic questionnaire, personal information was obtained by means of a background information survey that was filled out by each participant at the beginning of the protocol. Information regarding gender, year in school, and current Spanish course level was requested, as presented in Table 3.4. Dominant language was not requested as

heritage-speakers and speakers of other languages were eliminated during the classroom visits to recruit volunteers.

Table 3.4: Background information of Participants from Think-Aloud Protocol

		1st Semester	2nd Semester	3rd Semester	4th Semester
Year	Freshman	1	1	1	0
	Sophomore	2	2	0	1
	Junior	2	2	1	1
	Senior	0	1	3	3
	Graduate	0	0	1	0
Sex	Male	2	4	3	3
	Female	3	1	2	2
Dominant Language	English	5	5	5	5
	Other	0	0	0	0

Originally, there were 21 total participants in the think-aloud study. One of the second-semester learners was eliminated due to a malfunctioning of the recording equipment. A final breakdown of the participants by course is displayed in Table 3.5 below.

Table 3.5: Participants from Think-Aloud Protocol by Course Level

Course Level		Total Participants
First-Year	First Semester	5
	Second Semester	5
Second-Year	Third Semester	5
	Fourth Semester	5
Totals		20

Of the 20 participants, there were ten first-year Spanish L2 learners and ten second-year learners. Personal data questionnaires revealed students' language learning backgrounds, and all students of Spanish-speaking heritage were excluded from the study. In order to maintain consistency, this study focuses on L2 Spanish learners with an English L1. All participants were native English speakers and learned Spanish in a classroom environment.

3.2.2 Procedures

In contrast to the multiple-choice questionnaire, this portion of the study helped determine learner comprehension without the aid of L1 answers. The focus of this protocol was the extent to which L2 learners were able to *explain* humorous incongruities, whereas the first portion of the study helped determine the extent to which L2 learners were able to *detect* humorous incongruities by choosing a correct response. For verbalizations to be captured efficiently and to be reliable and complete, established and dependable procedures such as those explained by Cohen (1995), Ericsson and Simon (1993), and Wade (1990) were followed. Based on their study, Ericsson and Simon (1993) argue that the closest connection between thinking and verbal reports is found when subjects verbalize thoughts generated during task completion. When subjects are asked to think aloud, their verbalizations correspond to vocalizing inner speech that otherwise would have remained inaudible. Think-aloud protocols are based on the idea that to understand thought processes while problem solving, the subjects produce a running commentary as they solve a problem. In the current study, the problem was to explain humor to the investigator.

Instead of a computer-prompted comic strip, learners were provided a printed, hardcopy version of the questionnaire and were asked to articulate what they were thinking while looking at each item. Each session began with a brief introduction and an explanation of the study. The think-aloud participants had an additional script read to them before participation in the protocol:

Script 3.2: Think-Aloud Protocol Script Read to Participant[18]:

> **The purpose of this study** is to document learners' linguistic humor development throughout their language study. You will be among approximately 20 Spanish second language learners at the University of Texas in Austin participating in this study. You will not receive any financial or academic compensation for taking part in the study. All participants are English-speaking learners in various stages of Spanish language study. Approximately 5 students from each of the four levels of lower-division Spanish will be tested. The classes will be randomly selected from each of the Spanish courses offered at the university. These will include four courses from Spanish 506, 507, 312K, and 312L.
>
> You will complete a background questionnaire to describe your language history. If you have grown up in a Spanish-speaking household, you may be ineligible for this study. If you have had an extended stay in a Spanish speaking country you may also be disqualified from this study. Such exposure to Spanish may bias your experience with humor in the Spanish language and thus disqualify you from participation in this study.
>
> **If you agree to be in this study, we will ask you to do the following things:**
>
> - take a language background questionnaire
> - take a cartoon questionnaire
> - You are being asked to participate in a "think-aloud" exercise. This will involve an interview with me (to be scheduled outside of class time and held on the 5th floor of Benedict Hall). This "think-aloud" interview will be audio-taped.
>
> **Total estimated time to participate** in study and complete the questionnaires is less than 30 minutes

After reading the above statement, each comic was presented in the same order as the multiple-choice questionnaire (without the multiple-choice options) and the participants were encouraged to read the comic aloud in Spanish, then speak aloud their thoughts as naturally as possible while explaining what was understood. The participants were asked to answer the question, "Why do you think this comic strip is funny?" In other words, "What is funny?" or "Where is the punch line?", and not "Is this funny for you?" The participants were informed that regardless of whether they found the comic funny, the researcher was primarily concerned with their overall comprehension of the

[18] For a complete version of the IRB form, refer to Appendix 3.

comic and their corresponding thought processes. In a typical think-aloud session, data are gathered by having subjects "report the content of their immediate awareness" while reading (Olson, Duffy, & Mack, 1984, p. 254). Subjects were given the opportunity to say as much as they wanted about each cartoon with no time constraints.

Hosenfeld suggests that participants be allowed to read and verbalize at will, but that the researcher should encourage subjects when necessary with open-ended questions (Hosenfeld, 1977). The only input received from the investigator was intermittent encouragement and clarification of Spanish, since occasionally accent marks and individual letters were blurred during photocopying. When subjects asked for help or for a translation of a word, the researcher responded to the queries. When she was unable to help, she encouraged them to "figure it out from context." If participants could not read a word or phrase because of poor copy quality or if they misread a word while reading it aloud, the researcher would correct the mistake. Finally, reminders to think aloud were provided when there was a lapse in participants' verbalization.

Gaylin (1986) notes that humor analysis is 'heavy-handed' work and that "to try and say why a joke is funny or why fun is fun almost ordains a certain resentment against the analyst" (p. 128). Thus, the researcher tried to maintain a subtle, relaxed environment, as it was beneficial to the research that learners know that an appreciation of humor was not of concern. This procedure allowed for a more open think-aloud session because the only objective was whether or not the learners could understand the humor and discuss the incongruity. According to Roehr (2006), "In the case of think-aloud protocols, the

absence of researcher interference allows for relatively direct access to learners' thought processes" (p. 181). The participants were permitted to express their thoughts on the comics, but whether they thought the comics were 'bad', 'corny', or 'funny' bore no relation to the study objective, and presumably helped to relax learners and encouraged them to continue talking aloud.[19]

The researcher permitted the use of English or Spanish during the sessions because the option allowed learners to express themselves without linguistic restraints. The subjects were encouraged to use either language during the protocol because difficulties with oral L2 proficiency may inhibit the reporting of data. All participants chose to explain their thought processes in English.

3.2.3 Data Coding and Analysis

During the think-aloud sessions, learners were audio-taped and the results were later transcribed by the researcher in order to discover different stages of language processing and various aspects of the process itself (Gabrys-Barker, 2006). The following symbols were used during the transcription process and appear in the data.

Table 3.6: Symbols Used During Transcription

L	Learner
I	Instructor
…	A long pause
???	Unintelligible or mumbling
[ ]	An action or something not said

[19] While the researcher tried to maintain a relaxed testing environment, an inherent problem with think-aloud protocols is task effect. In other words, while not explicitly encouraged to approach the data in a specific way, the learners may have been influenced by the nature of the think-aloud design. This type of study design automatically draws attention to linguistic accuracy and the participants may have placed unnecessary pressure on themselves to understand and correctly explain each lexical item.

The protocols provide evidence of a variety of strategies used by the learners to arrive at various comprehension levels. Each participant was rated on a 3-point scale by the investigator during the think-aloud protocols. After all sessions were recorded and transcribed, an additional linguist[20] read the transcripts and rated the participants using the same 3-point scale. Any disagreements in the rating were resolved by discussion until 100% agreement was obtained. The three levels of responses are described below.

Table 3.7: Comprehension Levels for Think-Aloud Protocols

Comprehension Level	Definition
Minimal Comprehension	Irrelevant or incomprehensible explanation, "don't know", or reference to the literal or pictorial context without regard to the linguistic structure.
Partial Comprehension	General or vague reference to language and a partial, erroneous explanation
Complete Comprehension	Well formulated, explicitly articulated explanation.

In order to consider a learner's response as correct, two sets of criteria had to be met. The first set required that the learner identify the source of ambiguity. Mentioning that a word, sound, or phrase was being used in an ambiguous or unexpected manner, a word, sound, or phrase had more than one meaning, or an idiom was being taken in the literal sense could indicate this identification. The second set of criteria required that the learner explain the two meanings that could be derived from the ambiguity. In other words, the participant had to describe the dual scripts necessary for humor comprehension to the investigator. For instance, in Comic 4: "Library", the participant was required to select:

[20] A Spanish linguistics doctoral candidate in the Spanish and Portuguese department at the University of Texas at Austin.

- The ambiguous term – ***Auto***biographies (*autobiografías*) vs. ***Auto***mobiles (*automóviles*)

- The dual explanations - "Auto" can be segmented from the two similar words to create an ambiguity

Comic 4: "Library"[21]

Table 3.8 Comprehension Levels and Participant Examples

Comprehension Level	Participant Examples
Minimal Comprehension	Adam[22]: Alright, different story and, uh, well there's a guy behind a counter, maybe a library or something a librarian cause he's got books next to him. He's an older guy. He's looking down on this maybe a wise guy kind of kid and he says, um "Ginger Meggs en *la biblioteca*" It must be a library. "*Y sorpredente*" Oh, that's not a "*y*" it's another… Interviewer: I think it's an exclamation mark Adam: Yeah, it is. (re-reads comic) Maybe he's asking him, like, why are you here? I have to do a…my homework, uh, I have to write or read an autobiography. Where's the section of *automoviles* is? I don't know what *automoviles* is. It seems like maybe "where's the movies" or something? I don't know. Interviewer: Okay. Adam: I don't get the gist of it. I mean I think I get some of the gist in the end…but the words prevent me from knowing.
Partial Comprehension	Eddie: I think it's saying Ginger Meggs in the library. I don't know if Ginger Meggs is supposed to be a name or a word. So, anyway, *sorprendente* is a word I don't know. For the homework we are going to read an autobiography. Do you know where the section on automobiles is? Maybe it's not automobiles, but *automoviles* is a word I don't know.

[21] Librarian: Ginger Meggs in the library! How surprising!
Ginger: For homework we have to read an autobiography.
Ginger: Where is the section on automobiles.

[22] After transcription of the think-aloud protocol, each participant was assigned a random name. This name has no relation to the actual participant and cannot be used for identification purposes.

	Interviewer: Can you figure out why it is funny? Eddie: Unless autobiographies and *automoviles* are the same things, I don't really know why that's funny.
Complete Comprehension	Nate: Okay, so doing your homework, read an autobiography and where is the automobiles? Interviewer: And why is it funny? Nate: I guess because of the auto.

As Table 3.8 demonstrates, there is a clear distinction between comprehension levels. In these examples, Nate is the only participant who correctly identifies the humorous incongruity of the ambiguity of the morpheme *auto* and accurately articulates the humor of the comic. A participant who showed partial comprehension, Eddie, also identifies the ambiguity of the two words, *autobiografía* and *automóviles*, but is unable to provide an adequate explanation of the incongruity. Adam, a participant who shows minimal comprehension, can scarcely comprehend the comic, references the pictorial context, but is unable to segment the morpheme *auto,* thereby overlooking the humorous implicature.

The subjects' performances on the think-aloud protocol varied considerably. Individual participants fluctuated in comprehension level from comic to comic. Occasionally, learners were unable to make their thought processes explicit. Their protocols consisted of little more than reading the text aloud and making metacognitive comments about the task. In contrast, other times they produced very specific descriptions of their thought process. Therefore, it is impossible to provide an overall comprehension level rating for each participant. The discussion includes comments spoken by those who had complete-comprehension and in which the humorous

implicatures are fully explained, those who showed partial-comprehension who gave have adequate explanations of some aspects of the humorous elements, and those with minimal-comprehension who did not articulate the humorous components. For example, Hilary is a first-year learner who completely understood four comics, partially understood two comics, and minimally understood eight comics. She did not understand the majority of the comics. Due to the limited number of participants and comics presented, all participants were rated individually for each comic.

3.2.3.1 Comprehension Strategies

For purposes of analysis, an additional taxonomy of seven comprehension strategies was adapted from Block's think-aloud study with ESL students (Block, 1986). These comprehension categories describe the response-types of the participants and are not intended to exhaust the domain of possible comprehension strategies. Following the same procedure used for the written response answers from the online questionnaire, the think-aloud data were divided into idea units (n = 3,285) consisting of one clause (i.e. subject, verb, and modifiers). Combining Block and Davis' coding systems, I assigned each idea unit a reported comprehension strategy category (Block, 1986; Davis & Bistodeau, 1993). The seven categories were further combined into three larger groups (Bottom-up, Top-Down, and Metacognitive Strategies). Examples and explanations of all seven strategies are found in Table 3.9. Each of the participant examples is based on Comic 11: "Coffin".

Comic 11: "Coffin"[23]

Table 3.9: Comprehension Strategies, Definitions and Examples from the Think-Aloud Protocol

Strategy	Definition	Participant Examples
Bottom-Up Strategies		
Individual Word Focus	The participant concentrates on a particular word.	I can't place *dicho*. *Nunca* should be not or never. *Descansar* is to sleep.
Restatement or paraphrasing	The reader restates or rephrases content using different words, but with the same sense.	This is saying, like, if he was on vacation, I would have told him he was going to rest like never before. They're saying it was from a vacation, um, he didn't want to ever rest or something.

[23] Yes, he was on vacation…he had said that this year he wanted to rest like never before.

Grammatical Features	The reader focuses on the grammatical features in the text.	It is in the preterite. I'm trying to…um, see what tense there is…what the verbs are in, but I'm starting to get the tenses mixed up because we're just learning this new tense. Maybe this is the future conditional.
Top-Down Strategies		
Textual Context	The reader distinguishes between main points and supporting details, discusses the purpose of information, or places the text within context.	There are two strange looking individuals. I assume they are guys looking into a casket. There is some dead guy. At a funeral…home maybe?
Inference	The participant interprets the text, forms a hypothesis, or uses general knowledge to make associations with information in the text.	It has something to do with like cause you want to rest on vacation, but you don't want to die. So, he wasn't going to do something on vacation and he did it and it ended up killing him.
Metacognitive Strategies		
Evaluative comments on process or task	The reader describes strategy use, indicates awareness of components of the process or reflects on the process.	But it's like ironic. But that doesn't make it funny.
Performance Comments	The readers assess their degree of understanding, reflect on their performance, and/or provide a hedge statement.	I should have studied for this. I don't know. I haven't put together from the vocabulary, like, the gist of it.

As Table 3.9 demonstrates, each response was coded and categorized into one of the comprehension strategies. In contrast to the multiple-choice questionnaire, the think-aloud portion provided lengthier responses and explanations about the comics. Therefore, the individual comments (defined as subject, verb, and modifiers) could be assigned more than one type of comprehension strategy. For example, Dave states, "So, I'm guessing

like they were going to go on vacation and he wanted to go away for a year". This response is a combination of two strategies: Performance Comment ("So, I'm guessing") and Paraphrasing or Restating ("like they were going to go on vacation and he wanted to go away for a year"). In addition to the comprehension strategies implemented by the participants during the think-aloud protocol, some learners also made processing errors while discussing the comics.

3.2.3.2 Error Types

Various types of errors, made by the participants when processing the text aloud, were found in the think-aloud data transcriptions. Therefore, in addition to the seven comprehension strategies, a typology of processing errors was constructed, that identifies six error types. These errors could not be captured by the comprehension strategies alone. Rather, they were categorized into six different processing errors: (1) false cognates; (2) false paraphones; (3) false homonyms; (4) false word family; (5) false grammar; and (6) false picture understanding.

Examples of the processing errors are shown in Table 3.10 and are based on the Comic 14: "Knees":

Comic 14: "Knees"[24]

Table 3.10: Processing Errors, Definitions, and Participant Examples

Processing Errors	Definition	Participant Examples
False Cognates	Words that appear to, but do not, have a common etymological origin.	Madeline: *Rodillas?* Rodents? Nate: To fall of the rodents.
False Paraphones[25]	Two words that are similar but not identical in phonological form. They differ in meaning and orthography. In the narrow sense the term paronym refers to 'soundalikes' (cognate near-homophones such as affect/effect or feminine/feminist), but in the wider sense it covers any 'lookalike' or 'meanalike' confusable words (Hartmann & James, 1998)	Adam: This me *dio* is a god issue.
False Homonyms	One of two or more words spelled and pronounced alike but different in meaning. (Merriam-Webster Online Dictionary, 2010)	Kristen: He likes to see it in the church. Madeline: *Aquel* means like *aquello*, like over there.

[24] Door: Orthopedic Surgeon
Monk: It pleased me to see you in church.
Doctor: Thank you.
Monk: What is your favorite hymn?
Doctor: That one that says fall to your knees.

[25] The term 'paraphone' was been borrowed from music, and is being used to refer to words that are similar (*para*) in sound rather than the same (*homo*) (Dienhart, 1998). The tern paronym has also been used in linguistic research. For example, Redfern (1984) speaks of paronyms when referring to quasi-homophones. In the narrow definition, paronyms are supposed to be related etymologically (Cuddon, 1992). For the purposes of the current study, the 'paraphone' focuses on the similarity of sound, thereby suiting the intended purposes better.

False Word Family	The relationship between two or more similar word families or subfamilies.	Carl: Then *cae de rodillas* is, it sounds like, something about the shoulder or knee or joint. Sam: I would like to watch you [in church]
False Grammar	A false interpretation of grammatical or verbal structures in the comic.	Sam: I would like to *dio* give you. Bill: Me *dio* gusto is my god likes.
False Reading of Picture	An erroneous interpretation of the illustrations provided in the comic.	Adam: I guess he's a friar and that [god issue] goes along with that. Quinn: The friar is asking him what is his favorite hymn because he is assuming he is religious and I'm not exactly sure what *cae de los rodillas* is, but I guess it is something that is not religious at all. So, and it's like that's why the look on the friar's face is like no.

As the Table 3.10 demonstrates, the first five processing errors are word-based errors that occur when learners encounter unknown lexical items and then they associate the unknown lexical item with a pseudo-similar word from their lexicon. The final processing error (false picture understanding) is not word-based and occurs when learners misinterpret the illustrations.

Each think-aloud comment was categorized by comprehension strategy (see Table 3.9) and error type (see Table 3.10). Similar to the comprehension strategies, each comment could have more than one processing error. For example, Bill states, "*Me dio gusto* is my god likes." The first part "my god" is a false paraphone and the "likes" is a false grammar mistake. These categorizations help to analyze the think-aloud data and recognize trends in L2 cognitive processing of humorous implicatures. The current data were analyzed as to how L2 learners process and comprehend humor. Therefore, the

comments made during the think-aloud protocol were categorized in order to draw conclusions regarding processing. Using a combination of classification systems (comprehension strategies and errors in processing) contributes to the overall discussion of how learners approach and analyze unknown L2 text. The think-aloud data contribute to the discussion of learners' performance during the online questionnaire and are used to fill in research gaps.

Chapter 4 examines the quantitative results found. The results of the online, multiple-choice questionnaire are discussed and analyzed according to course level and linguistic humor type.

CHAPTER 4: RESULTS FROM MULTIPLE-CHOICE QUESTIONNAIRE

4.1 Introduction

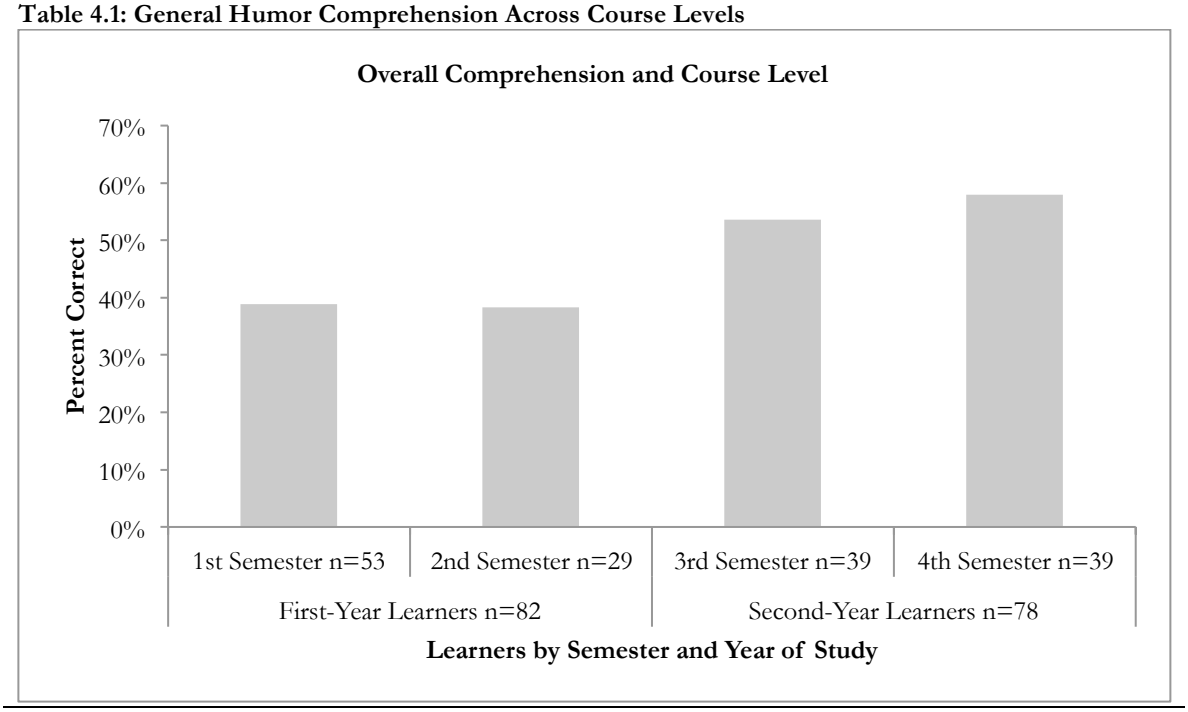
The current chapter addresses the data gathered in order to investigate the research questions presented in Chapter 2; namely, is there a progressive development of linguistic humor comprehension across course levels (first- to fourth-semester beginning Spanish)? And in what order does each type of linguistic humor (i.e. semantic, phonological, morphological, and syntactic) develop?

4.2 General Comprehension Across Course Levels

To find a significant correlation for humor comprehension by level of L2 Spanish study, a two-way repeated measures ANOVA was run. The results demonstrate a significant effect of course level by year, [$F(3,160) = 12.2$ $p < 0.05$].[26] As demonstrated in Table 4.1 below, there is a significant jump in comprehension between first-year (a combination of first- and second-semester learners) and second-year (a combination of third- and fourth-semester) Spanish learners.

[26] A Bonferroni correction post-hoc test confirmed the results. The Bonferroni correction is a multiple-comparison correction used when several dependent or independent statistical tests (in this case four independent tests) are being performed simultaneously (since while a given alpha value may be appropriate for each individual comparison, it is not for the set of all comparisons). In order to avoid many of spurious positives, the alpha value needs to be lowered to account for the number of comparisons being performed (Weisstein, 2008).

Table 4.1: General Humor Comprehension Across Course Levels



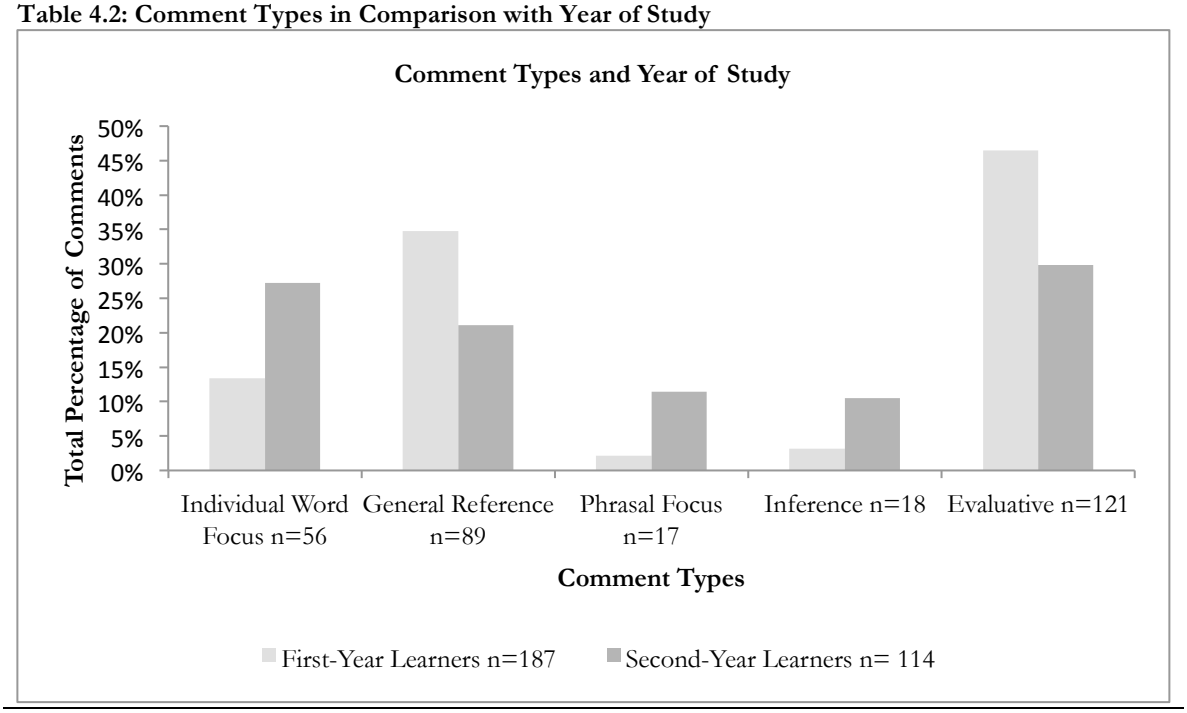
Year of Study	Semester of Study	Mean	Std. Error	95% Confidence Interval	
				Lower	Upper
First-Year *n*=82	1st Semester *n*=53	38.84%	2.51%	33.89%	43.79%
	2nd Semester *n*=29	38.25%	3.31%	31.72%	44.78%
Second-Year *n*=78	3rd Semester *n*=39	53.65%	2.91%	47.90%	59.39%
	4th Semester *n*=39	57.95%	2.95%	52.13%	63.77%

As Table 4.1 shows, there is a significant increase in overall humor comprehension between first-year and second-year learners. The data demonstrate that 38.55% of first-year learners and 55.80% of second-year learners chose the correct multiple-choice option.

In addition to the ANOVA results presented in Table 4.1, a chi-square test for independence indicates that comment type is dependent upon year of study: $\chi^2(4) = 33.79$, $p < .05$. Significant differences between comment types and year of study were confirmed by z-tests. There was a significant difference between first-year and second-

year learners for all comment types: individual word focus, z = -2.99, p<.05, general vocabulary z = 2.53, p<.05, phrasal focus z = -3.38, p<.05, inference z = -2.60, p<.05, and evaluative comments z = 2.87, p<.05. As Table 4.2 demonstrates, each of the categories shows a significant difference between the two groups of L2 language learners.

Table 4.2: Comment Types in Comparison with Year of Study



Comment Type (*n*=301)	First-Year (*n*=187)	Second-Year (*n*=114)	z-test (p<.05)
Individual Word Focus (*n*=56)	25 (13.4%)	31 (27.2%)	-2.99
General Reference (*n*=89)	65 (34.8%)	24 (21.1%)	2.53
Phrasal Focus (*n*=17)	4 (2.1%)	13 (11.4%)	-3.38
Inference (*n*=18)	6 (3.2%)	12 (10.5%)	-2.60
Evaluative (*n*=121)	87 (46.5%)	34 (29.8%)	2.87

The data in Table 4.2 help provide additional detail regarding the data presented in Table 4.1, which indicates that second-year learners significantly outperformed first-

year learners on the questionnaire. As seen in Table 4.2, nearly half (46.5%) of first-year learners' written responses were an Evaluative Comment on the process of the task. A combination of Evaluative and General Reference to Vocabulary or Grammar comprises 81.3% of first-year learner comments. The majority of the Evaluative Comments were a variation of "*I don't know/understand*" or a comment about their L2 Spanish language skills (e.g. "*I don't know/understand Spanish*"). Evaluative comments were also prevalent in second-year learners' written responses (29.8%); however, in contrast to first-year learners, 27% of second-year learners commented on Individual Word Focus compared to 13.4% of first-year learners. To discuss the results presented in Tables 4.1 and 4.2, the following section addresses the data with two examples from the online questionnaire and corresponding comments.

4.2.1 Discussion: Progressive Comprehension of Linguistic-based Humor Across Course Levels

The data suggest that second-year learners were more proficient in general text comprehension, specifically in identification of humorous implicatures. The following examples demonstrate how second-year learners were better equipped to access their L2 lexical base, isolate sources of confusion, and effectively utilize the multiple-choice section by searching for important information. These data substantiate findings from other SLA studies, demonstrating that general lexical knowledge is a strong predictor of L2 success (Bossers, 1992; Haynes & Baker, 1993; Koda, 1989; Laufer, 1992). The first example used to corroborate the statements presented above is from a phonology-based

comic. Phonology-based humor is contingent upon the ability to identify manipulation of phonological stress.

4.2.1.1 Phonology-based Comic 6: "Donkey"

Comic 6 is one of four phonological comics (Comic 6: "Donkey", Comic 7: "PresBust", Comic 8: "Revealed", and Comic 9: "Waiter") presented to the learners in the questionnaire. Comic 6 is an example of the stress or juncture phonological humor in which humor is created by an unexpected pause or stress in a word or phrase.[27] The placement of the stress changes the meaning of the word or phrase. In this comic, the humor is created by the unexpected stress placed on the words, *Donkey Jote* 'Don Quijote'.

Comic 6: "Donkey" [28]

This comic is funny because _____

[27] For a more complete explanation, see Section 1.2.1.1 Phonological Elements

[28] Son: Dad, how do you spell "Donkey"?
Father: D…O…N…K…E…Y Are you studying animals?
Son: No, it's for a report on Cervantes
Father: I'm sorry, but…what does "Donkey" have to do with Cervantes?
Son: A lot, Dad, haven't you ever heard of "Donkey Jote"?

Table 4.3: Response Options to Comic 6: "Donkey"

Response Options	Percentages	
	First-year	Second-year
a) The son is making fun of his father's ability to hear	15.3 %	13.9 %
b) "Donkey Jote" is the title of a recent novel	14.1 %	3.8 %
c) The son is trying to get his father to write his book report for him	20 %	3.8%
d) The son thinks he is very clever by making fun of Cervantes' book	40 %	70.9 %
e) I don't know because _____	10.6 %	7.6 %

In the multiple-choice questionnaire, 40% of first-year learners and 70.9% of second-year participants chose option D, the correct response. As discussed in Chapter 3, three answer choices were distracters. Each distracter choice was categorized by type (orthographic or phonological, idiomatic, and schematic).[29] For Comic 6, none of the distracter choices were substantially relevant, indicating that both groups utilized previous knowledge, the answers provided, and the illustrations as a means to comprehension. Comic 6 was chosen because it is a close representation of the participants' overall comprehension of the phonology-based comics. When analyzing the phonology comics as a group, 42% of first-year learners and 64.5% of second-year learners chose the correct multiple-choice option. For Comic 6, 14 learners (or 8.8%) chose to write a written response. These written responses are provided in Table 4.4 and are divided by first-year vs. second-year and by comment category.

Table 4.4: Written Responses to Comic 6: "Donkey"

Participants	Participant Comment	Comment Category
First-Year		
MA(134)	don't understand vocab	General Reference
MA(131)	I don't know the vocab	General Reference
FA(125)	dont understand the punch line	Phrasal Focus
MA(87)	I don't get it.	Evaluative
MA(149)	can't understand	Evaluative
FA(135)	I don't understand	Evaluative

[29] For a more complete explanation, see Section 3.1.4 Data Coding and Analysis

FA(119)	don't understand	Evaluative
MA(155)	I don't understand	Evaluative
Second-Year		
MB(81)	I don't know what a *cervante* is	Individual Word
FB(70)	I don't know who *Cervantes* is.	Individual Word
FB(96)	Do not know what "*DOnkey Jote*" is	Phrasal Focus
FB(82)	I don't know what *Donkey Jote* means.	Phrasal Focus
FB(43)	I don't understand the comic.	Evaluative
MB(65)	I don;t understand the context.	Evaluative

As Table 4.4 demonstrates, there is a noticeable difference in comment types when comparing first-year and second-year responses. The majority of first-year written responses were evaluative, reflecting a lack of understanding without detailing how or what prohibited comprehension. Participant #125 was unique in mentioning the punch line. Participants #134 and #131 made reference to a general lack of vocabulary knowledge. Only one second-year participant (#43) indicated a general reference to vocabulary or grammar, while the majority of second-year written responses differed from those of first-year learners, particularly in their tendency to specify a lexical or phrasal misunderstanding.

As seen in Table 4.1, second-year participants demonstrated a higher level of humor comprehension and processing. The data suggest that these learners (a) used the answers to help them with unknown or unfamiliar lexical items (i.e. Cervantes), (b) inferred meaning from context (i.e. recognizing the word stress found in Donkey Jote), (c) noticed relationships (i.e. Cervantes as proper noun and author of the book), and (d) correlated them with previous knowledge (i.e. using the illustrations and background knowledge). These comprehension and processing skills were evidenced in their

multiple-choice percentage of correct responses (70.9%) and in the 6 written response answers.

As a demonstration of the above statements, Participants (#81 and #70) focused on the lexical item *Cervantes*. Participant #81 changed the proper noun *Cervantes* into the common noun 'a *cervante*'. The lexicalization of the word *Cervantes*, which is evidenced by the non-capitalization of the first letter and the addition of the indefinite article "a", demonstrated the learner's ability to correlate an unknown word with knowledge of the Spanish lexical system. Participant #70 was also confused by the word *Cervantes*. She noted that Cervantes was a person, as evidenced in her explanation, "I don't know who Cervantes is". This answer demonstrated that she took advantage of the words available in the multiple-choice section to attempt comprehension of the comic. Two of second-year's learners (#96 and #82) focused on the final frame by mentioning "*Donkey Jote*". While these participants concentrated on the final frame, they did not appear to identify the manipulation of stress necessary for comprehension or they may have been unfamiliar with the novel *Don Quijote*. Of the second-year participants, two (#65 and #43) provided an evaluative comment on the process, but their responses were distinct from any first-year evaluative comments because they specified 'the context' and 'the comic' respectively. By indicating the 'context', participant #65 may have been indicating the illustrations or may have been perplexed by the reference to *Don Quijote*. Not understanding 'context' or 'the comic' constitutes a large spectrum, but this learner

did attempt to explain why he didn't understand beyond the customary "*I don't understand"* found in first-year written responses.

Second-year learners identified comprehension gaps more frequently and more explicitly than did first-year learners. The tendency for second-year learners to specify unknown or unfamiliar lexical elements may have been due to their linguistic progress in the Spanish program, their awareness that specific comprehension strategies were more helpful in solving gaps in comprehension, and/or their overall intellectual development. In line with Pulido's (2004) study, first-year learners indicated a general lack of lexical knowledge as problematic while second-year learners seem to progress into the identification of unknown lexical items linked to a gap in comprehension. Such awareness may be a necessary predecessor to taking action and inferring humor. Finding the source of difficulty may be as important as having the resources to overcome them. The ability to attribute a comprehension difficulty to a source as seen in second-year learners rather than to lack of skill as seen in first-year learners may be an important part of effective L2 comprehension (Block, 1992; Carrell, 1989).

Furthermore, the data indicate that a lack of vocabulary often limited all the participants' humor comprehension as evidenced in first-year learners' preference for a global approach and in second-year learners' tendency for lexical isolation. Second-year learners seemed to favor a local, word-based processing strategy while the first-year learners tended to prefer a more global one, as evidenced in their preference for General Reference to Vocabulary comments. This finding conflicts with previous research

conducted on comprehension strategies in which more proficient learners preferred global or top-down comprehension strategies to bottom-up or word-based strategies (Cohen, Glasman, Rosenbaum-Cohen, Ferrara, & Fine, 1979; Garner, 1981; Garner & Kraus, 1981; Myers & Paris, 1978). The second-year learners were not only more competent in strategy application, but their ability to analyze text in a more critical manner may have been more fully developed. As undergraduates progress through their education, presumably their cognitive development improves along with their metalinguistic ability to process more complex or conceptual language.

The following syntax-based example contributes to the finding that second-year learners were better equipped to isolate their source of confusion and that lack of essential vocabulary likely impacted overall humor comprehension; however, overgeneralization of these results is cautioned as individual differences between learners are apparent.

4.2.1.2 Syntax-based Comic 14: "Knees"

Comic 14: "Knees" is one of five syntax-based comics. The other four comics are titled Comic 10: "Women", Comic 11: "Coffin", Comic 12: "Insurance", and Comic 13: "Horns". In syntax-based comics, the humor is created by two different underlying structures that have an identical surface form. To comprehend the humor, readers must identify and describe the multiple-meaning words or phrase to be inferred to create humor. In Comic 14, the final phrase *cae de las rodillas* 'Fall on your knees' contains a surface and an underlying meaning. On the surface, the phrase refers to church

worshippers getting down on their knees to pray. The underlying meaning is that as the church attendants (future patients) fall to their knees, they require more orthopedic attention, thereby creating business opportunities for the doctor. The correct response to the multiple-choice section is answer C.

Comic 14: "Knees" [30]

This comic is funny because _____

Table 4.5: Response Options to Comic 14: "Knees"

Response Options		Percentages	
		First-year	Second-year
a)	The priest is calling the doctor out about not attending church.	14.0 %	14.6 %
b)	The doctor just told the priest he has knee problems from praying too much.	35.5 %	24.4 %
c)	The doctor makes money off the priest's parishioners	22.6 %	32.9 %
d)	The doctor would rather play dice than go to church.	7.5 %	1.2 %
e)	I don't know because _____	20.4 %	26.8 %

In Comic 14, 22.6% of first-year and 32.9% of second-year participants chose the correct multiple-choice response (answer choice C). Contrastively, 35.5% of first-year and 24.4% of second-year participants chose the schematic distracter option B, the only

[30] Sign reads: Orthopedic Surgeon
Monk: It was a pleasure to see you in church.
Doctor: Thank you.
Monk: What is your favorite hymn?
Doctor: The one that says, "Fall on your knees"

response with the word "knees" in the answer. The schematic distracter may have influenced learners by focusing their attention on the illustrations. The focus on illustrations indicates that first- and second-year learners utilized, although ineffectively, the contextual cues from the illustration. This syntax-based comic was chosen because 20.4% of first-year and 26.8% of second-year participants replied with a written response. The answers to the written response option are provided in Table 4.6 and demonstrate the different approaches to humor comprehension between the two groups of L2 learners.

Table 4.6: Written Responses to Comic 14: "Knees"

Participants	Participant Comment	Comment Category
First-Year		
MA(124):	i dont know what *rodillas* means, nor can I figure it out with English	Individual Word Focus and Evaluative
MA(201):	*Iglesia y rodillas*	Individual Word Focus
FA(161):	I don't know what *rodillas* are?	Individual Word Focus
FA(175):	I don't understand what a lot of these words mean	General Reference
FA(182):	I don't understand some of the vocabulary	General Reference
FA(132):	I don't recognize some of the vocabulary...	General Reference
MA(111):	there is alot of vocab i dont know in panels 2 and especially 4	General Reference
FA(154):	I don't understand some of the vocabulary.	General Reference
FA(104):	I don't know the meaning of a few vocabs	General Reference
MA(205):	Vocab	General Reference
MA(189):	I don't know what "*cae de rodillas*" means	Phrasal Focus
MA(203):	I dont know the meaning of *cae de rodillas*	Phrasal Focus
MA(184):	I don't understand.	Evaluative
FA(145)	I don't understand it.	Evaluative
MA(134):	don't understand it	Evaluative
MA(146):	didn't understand	Evaluative
FA(130):	i dont really understand it	Evaluative
FA(121):	I can't understand it	Evaluative
FA(114):	I don't understand	Evaluative
Second-Year		
FB(101):	I don't know what *Rodillas* are...	Individual Word Focus
MB (67):	I don't know what *rodillas* is....	Individual Word Focus
MB(60):	I don't know the meaning of *rodillas*.	Individual Word Focus
FB(50):	what does *rodillas* mean?	Individual Word Focus
FB (70):	I don't know what *himno* or *cae de rodillas* means	Individual Word Focus and Phrasal Focus
MB(95):	Mentions *dice* and other gambling games but I	Individual Word Focus and

	don't recognize a lot of the Spanish vocab.	General Reference
MB(109):	I didn't understand some of the vocabulary.	General Reference
FB(91):	don't get understand vocabulary	General Reference
FB (79):	I don't know the vocabulary.	General Reference
FB(72):	I don't understand the last box.	Phrasal Focus
FB(86):	I don't know what "*cae de rodillas*" means.	Phrasal Focus
FB (75):	I don't know what *'cae de rodillas'* means.	Phrasal Focus
MB (71):	I just didn't understand the last part.	Phrasal Focus
FB(63):	I don't know what the doctor is saying to the priest in the last frame	Phrasal Focus
FB(38):	i don't understand the last box	Phrasal Focus
MB(28):	I didnt understand the punchline	Phrasal Focus
FB(106):	I don't understand the last caption	Phrasal Focus
FB(100):	I don't understand	Evaluative
FB(96):	I do not understand what they are saying	Evaluative
FB (74):	I don't understand	Evaluative
FB(57):	I didn't understand some parts of it.	Evaluative
FB(45):	*no comprende*	Evaluative

As Table 4.6 illustrates, the majority of first-year learners responded with a General Reference to Vocabulary or Grammar or provided an Evaluative comment. Most comments referred to a general lack of lexical knowledge or an overall lack of comprehension. There were five first-year learners (#189, #203, #124, #201, and #161) with responses similar to those of second-year learners. Two of these participants (#189 and #203) identified the surface phrase *cae de rodillas* 'fall on your knees' but were unable to determine the underlying meaning. This phrasal identification indicates that the two learners understood the majority of the comic, but were unable to interpret the final phrase. An additional three participants (#124, #201, and #161) explained their difficulties by mentioning the individual lexical items (*rodillas* and *iglesia*) that impeded comprehension. Participant #124 focused on the individual lexical item *rodillas* and explained his attempt to utilize the English provided in the multiple-choice section. His answer was considered an Individual Word Focus comment due to the first part of his

written explanation (i.e. the focus on *rodillas*) and also an Evaluative comment because he described strategy use (i.e. the attempt to use the English provided in the multiple-choice section). Although the majority of first-year comments were Evaluative or General Reference comments, these five participants helped to indicate that not all first-year learners approach L2 comprehension from the same perspective.

The written responses from second-year participants were a direct reflection of their preferred strategies. Nine of the comments were directed to the final frame and the phrase *cae de rodillas*. Without comprehension of the underlying meaning, they were unable to choose an acceptable multiple-choice answer. Six participants mentioned individual lexical items *rodilla, himno,* and *dice*. The false cognate *dice* was used as an orthographic or phonological distracter in Option D and participant #95 clearly utilized this answer when referencing "dice and other gambling games."

As the data demonstrate in Table 4.6, the difference between the two groups may be their approach to L2 comprehension in which first-year learners tended to view the text as a whole whereas second-year learners were more inclined to isolate sources of miscomprehension by recognizing an unknown lexical item. Nevertheless five first-learners did identify specific lexical items or phrases which inhibited their ability to choose a multiple-choice option. Similar to second-year learners, these participants identified specific lexical items that they were unable to translate. Due to this lexical gap, they did not choose a multiple-choice option and explained their gap in comprehension. In addition, nine of the second-year learners wrote written responses in the Evaluative or

General Reference to Vocabulary categories, indicating that year of study was not the only contributing factor to comprehension. Comic 14 lends support to L2 studies that claim that the effective implementation of comprehension strategies is a strong predictor of successful L2 comprehension.

4.2.1.3 Summary

The current data suggest that as learners progress through their studies (from first to second year L2 learning), they improve in L2 comprehension by sharpening their inferencing skills and utilization of comprehension strategies. The expanding ability by second-year learners to comprehend humorous implicatures may reflect a change in their effective implementation of comprehension strategies. Namely, these learners may be better able to infer meaning using previous linguistic exposure, context, and general world knowledge. Second-year learners' increased experience with L2 input probably helps them tap their lexical base and more efficiently utilize contextualized information found within the comics (e.g. illustrations) and the questionnaire (e.g. English translations). However, it would be imprudent to suggest that year of study is the strongest predictor of L2 humor comprehension. The written comments to Comic 14 verify the variety of individual differences that exist between learners and suggest that the effective implementation of comprehension strategies may be the largest predictor of humor comprehension.

The ability of second-year learners to implement effective strategies is reflected in their comments and supported by the data presented in Table 4.1. The comments of many

of the second-year learners are more precise and therefore more analytical and critical. First-year learners attempt bottom-up processing and, when this fails, they may be unable to comment with any precision about their L2 comprehension. The ability to analyze conceptual or figurative language may be due to not only to gains in L2 acquisition but also to improved metalinguistic ability, a trait that should improve in all students as they progress through the educational system.

In conclusion, second-year learners outperformed first-year learners in identifying the correct multiple-choice option across linguistic humor categories. Second-year learners achieved an overall comprehension rate of 55% as compared to first-year learners who identified 38% of the comics in the survey. However, when the linguistic humor types were analyzed on an individual basis, there was a notable difference between humor types (semantic, morphological, phonological, and syntactic). The following sections address the second research question proposed in the first chapter: Is there an order of humor development within the four linguistic-based humor types?

4.3 General Comprehension Based on Linguistic Humor Type

In order to address an order of development within the four linguistic-based humor types, a two-way repeated measures ANOVA was used. There was a significant effect by linguistic humor type in the results. As shown in Table 4.7, significance was demonstrated by linguistic humor type (phonological, morphological, semantic, and syntactic), whereby semantics-based humor comprehension was significantly lower than

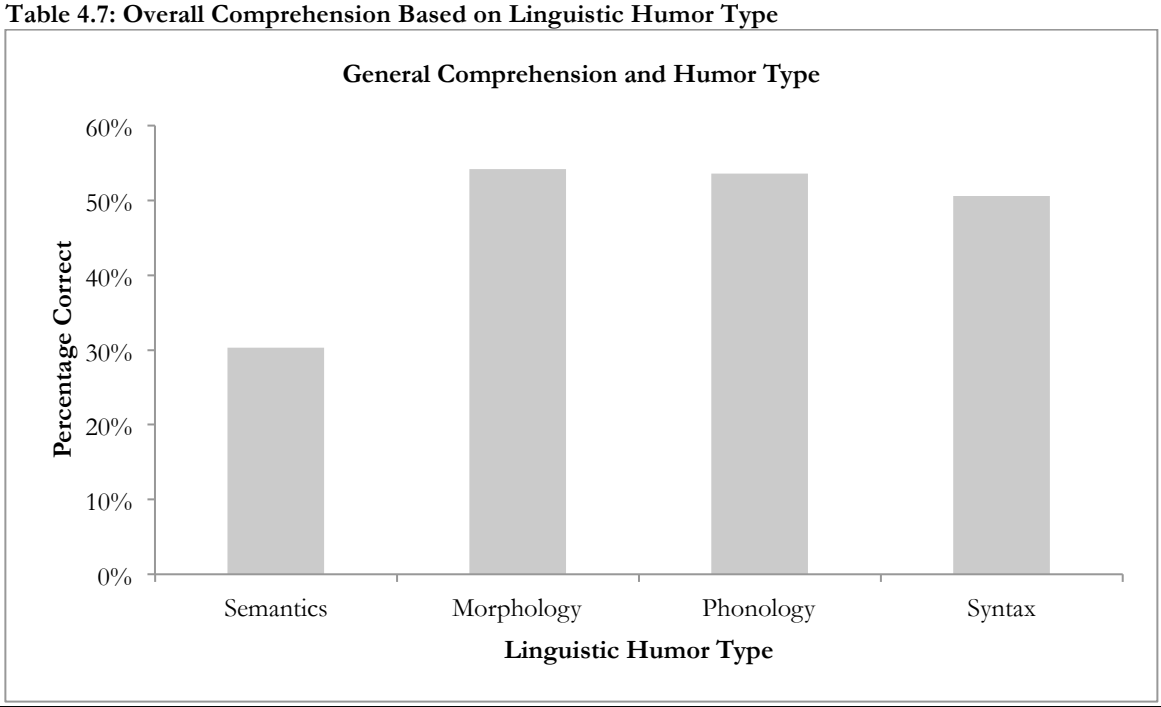
that of the other linguistic humor types [F (2.9, 462.5) = 33.895, $p < 0.05$]. [31] However, due to a violation of the assumption of sphericity,[32] a Huynh-Feldt correction[33] ($\chi 2 = 0.96$) was applied to the data. After a Bonferroni correction, ANOVA results were $p<0.05$. Next, pairwise comparisons were conducted, indicating that semantic humor was distinct from the other humor types (phonological, morphological, and syntactic). As Table 4.7 demonstrates, there is a significant difference between semantics-based humor comprehension (30%) and the other humor types. The data collected from the online questionnaire establish that other linguistic areas are understood by at least 50% of the participants.

[31] It must be noted that if participants had been exposed to more semantics-based comics, they may have performed better in this section. Nevertheless, the statistical analysis used to analyze these data considered the number of comics in each category to determine relevancy, and with this consideration, the semantics-based comics are the least understood of the linguistic humor types.

[32] Sphericity is a mathematical assumption in repeated measures ANOVA designs. Within-subjects ANOVA makes a restrictive assumption about the variances and the correlations among the dependent variables. It is assumed that all the correlations are equal and all the variances are equal. Violating the assumption of sphericity leads to an increase in error rate (Lane, 2008).

[33] When the assumption of sphericity is violated, a correction to the standard ANOVA test is used. The Huynh-Feldt correction adjusts the degrees of freedom in the ANOVA test in order to produce a more accurate significance (p) value. If sphericity is violated, the p values need to be adjusted upwards (and this can be accomplished by adjusting the degrees of freedom downwards) (Howell, 2002).

Table 4.7: Overall Comprehension Based on Linguistic Humor Type

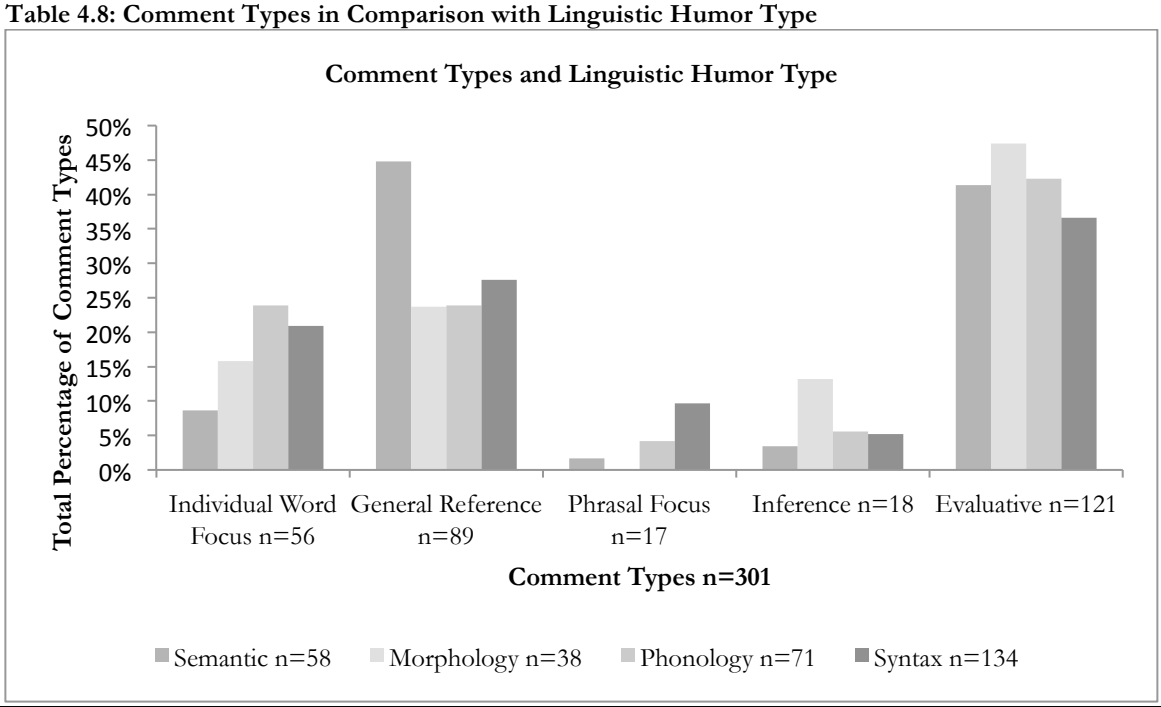


Humor Type	Mean	Std. Error	95% Confidence Interval	
			Lower	Upper Bound
Semantics	30.33%	2.47%	25.44%	35.22%
Morphology	54.22%	2.11%	50.05%	58.38%
Phonology	53.59%	2.33%	48.98%	58.20%
Syntax	50.55%	1.99%	46.62%	54.48%

The semantics-based humor results presented in Table 4.7 suggest that L2 learners struggle with multiple-meaning words. Comprehension of multiple-meaning words (e.g. *tomar* has at least two English equivalents – 'to take' or 'to drink') is paramount in semantics-based humor and learners must be capable of recognizing lexical items with multiple interpretations. The answers found in the written response section help clarify the data presented in Table 4.7 and indicate that a strong lexical base may be a powerful predictor of humor comprehension.

After the written response comments were categorized by linguistic humor type, they were further analyzed to determine that comment type does significantly depend upon humor type ($\chi^2(12) = 23.62$, $p < .05$). A deeper investigation of standardized residuals (=2.14) shows that semantics-based comics have the highest percentage of written responses in the General Reference to Vocabulary or Grammar category than the other three types as shown in a chi-square test of independence, $\chi 2(3)=8.44$, $p<.05$. The other comment types failed to show statistical significance in a chi-square test (see Table 4.8 for percentage comparisons). However, significance was demonstrated by z-tests when comparing semantics-based humor with phonology- and syntax-based humor within Individual Word Focus: (phonology, $z = -2.30$, $p<.05$ and syntax $z = -2.07$, $p<.05$). There was no significance found between semantics- and morphology-based humor types within Individual Word Focus: (morphology, $z = -1.07$, $p=0.28$). Based on these data, the following discussion focuses on semantics-based humor comprehension with reference to Individual Word Focus and General Reference to Vocabulary or Grammar comment types.

Table 4.8: Comment Types in Comparison with Linguistic Humor Type



Comment Type (*n*=301)	Semantics (*n*=58)	Morphology (*n*=38)	Phonology (*n*=71)	Syntax (*n*=134)
Individual Word Focus (*n*=56)	5 (8.6%)	6 (15.8%)	17 (23.9%)	28 (20.9%)
General Reference (*n*=89)	26 (44.8%)	9 (23.7%)	17 (23.9%)	37 (27.6%)
Phrasal Focus (*n*=17)	1 (1.7%)	0 (0.0%)	3 (4.2%)	13 (9.7%)
Inference (*n*=18)	2 (3.4%)	5 (13.2%)	4 (5.6%)	7 (5.2%)
Evaluative (*n*=121)	24 (41.4%)	18 (47.4%)	30 (42.3%)	49 (36.6%)

Table 4.8 summarizes all comments (n=301) written in response to the prompt "I don't know because…" found in the online questionnaire. These comments are helpful when analyzing the results found in Table 4.7 because they demonstrate the preference of learners to focus on general vocabulary knowledge rather than individual lexical items when presented with semantics-based humor.

4.3.1 Discussion: Acquisition Order of Linguistic-based Humor Types

The data indicate that a strong lexical base may be a valid predictor of L2 linguistic humor success. Schmitz (2002) suggests this result in saying, "Word power is basic to the comprehension of humorous discourse" (p. 102), and Dale and Reichert (1957) claim that vocabulary is the best single index of academic achievement. A learner's L2 lexicon is recognized as central to any language acquisition process. "No matter how well the student learns grammar, no matter how successfully the sounds of L2 are mastered, without words to express a wider range of meanings, communication in an L2 just cannot happen in any meaningful way" (McCarthy, 1990, p. viii). A brief overview of semantics-based humor may help explain the data presented in Tables 4.7 and 4.8.

Semantic humor is created using words that have more than one meaning (multiple-meaning words) or humor based on the ambiguity of a word. For example, observe the following two jokes:

(1) Never tell secrets in a cornfield, because corn has ears.

(2) A: ¿Qué hace un pez cuando está aburrido?
B: ¡Pues, nada![34]

In these two riddles one must identify and describe the ambiguous or multiple meaning word that creates the humor. In order to comprehend multiple-meaning words, the learner must be able to identify more than one meaning of a word (Wiig, 1984). In the

[34] What does a fish do when it's bored?
Well, nothing! / Well, it swims! (two possible readings)

first example, the multiple-meaning word *ear* can signify an organ of hearing or the product of a corn plant. To understand fully the implicatures found in a semantic riddle, one must be familiar with competing interpretations of a single lexical item. In the second joke, the item *nada* 'nothing' or 'swims' has two interpretations: a third-person singular conjugation of the verb 'to swim' and the pronoun, 'nothing'. Successful processing of both scripts (for the word *nada*) is necessary in order to comprehend the joke.

The written responses lend support to the claim that a strong lexical base is necessary for L2 humor comprehension to occur. The following discussion is presented with reference to Comic 2: "Moving up" and addresses the results by year of study with reference to the distinct features that encompass semantics-based humor.

4.3.1.1 Semantics-based Comic 2: "Moving-up"

Comic 2: "Moving up" was one of two semantics-based comics (Comic 1: "Love" and Comic 2) presented to the learners. In Comic 2, the dual interpretations of the lexical item *arriba* 'up' must be recognized. The surface interpretation of the word 'up' is interpreted as a promotion within the company. However, in the final frame, the word 'up' is clarified and the underlying meaning (to go 'up' to the roof and cover holes) is expressed. The correct response to Comic 2 was answer choice C.

Comic 2: "Moving up"[35]

This comic is funny because _____

Table 4.9: Response Options to Comic 2: "Moving up"

Response Options		Percentages	
		First-year	Second-year
a)	The condor wants Pepe to move his desk to the basement	8.0 %	2.5 %
b)	The condor is making fun of the fact that Pepe works for the birds	12.6 %	7.5 %
c)	Moving up in the company usually doesn't involve work on the roof.	20.7 %	41.3 %
d)	The condor wants Pepe to eavesdrop on the other workers by taping them.	31.0 %	22.5 %
e)	I don't know because _____	27.6 %	26.3 %

In this example, 41.3% of second-year learners and 20.7% of first-year learners chose the correct multiple-choice response (answer choice C). First-year participants preferred answer choice D, an orthographical or phonological distracter. In this distracter, the Spanish verb *tapar* 'to cover' was presented as the false cognate 'to tape'. Therefore the 31.0% of first-year and 22.5% of second-year learners who preferred this distracter may have relied upon false cognates. Nearly 27% of the questionnaire participants chose

[35] Condorito: I want to propose something to you. Do you want to move up in this company?
Pepe: Of course I do, sir.
Condorito: How wonderful…
Condorito: …I want you to go work on the roof and cover all the leaks.

to write a response rather than choose one of the multiple-choice options, a higher percentage than in the other comics. It is unclear as to why more participants opted to write an answer for this comic instead of relying on the options provided. The written responses are provided in Table 4.10 and the difference between first-year and second-year learners' comment types is perceptible.

Table 4.10: Written Responses to Comic 2: "Moving up"

Participants	Participant Comment	Comment Category
First-Year		
MA(205)	Vocab	General Reference
FA(180):	vocabulary	General Reference
FA(135):	I don't understand the words	General Reference
FA(128):	I dont understand the words.	General Reference
FA(129):	vocab	General Reference
FA(110):	There is too much vocabulary that I am not familiar with.	General Reference
MA(111):	vocab	General Reference
MA(203):	Vocabulary	General Reference
FA(154):	Don't know the vocab.	General Reference
MA(163):	unfamiliar terms	General Reference
MA(162):	I don't know the words	General Reference
FA(193):	I cannot understant Spanish despite the fact I am in 507!	Evaluative
FA(114):	too long and don't understand	Evaluative
FA(130:	i dont understand it	Evaluative
FA(119):	don't understnad it	Evaluative
FA(176):	I can't figure out what it says	Evaluative
FA(190):	I don't understand.	Evaluative
FA(176):	i don't know.	Evaluative
MA(184):	I don't understand.	Evaluative
FA(145):	i don't understand it.	Evaluative
MA(138):	not sure i understand	Evaluative
MA(149):	can't understand	Evaluative
FA(193):	I cannot understant Spanish despite the fact I am in 507!	Evaluative
Second-Year		
FB(91):	don't know the word *goteras*	Individual Word Focus
MB(81):	I don't understand the vocab in the last frame (i.e. *tapes* and *goteras)*	Individual Word Focus
FB(83):	i don't know if the word is basement or roof	Individual Word Focus
FB(84):	I don't know what *goteras* means	Individual Word Focus
FB(62):	I'm not sure what *las goteras* means	Individual Word Focus
MB(35):	I don't know all the vocuabulary used in the comic.	General Reference
MB(28):	I have no clue what the condor is saying	General Reference
FB(38):	i don.'t understand what it says	General Reference

MB(95):.	don't know enough vocab	General Reference
FB(86):	I don't understand the vocabulary.	General Reference
MB(87):	I don't know some of the vocabulary.	General Reference
FB(56):	don't know a lot of the words	General Reference
FB(51):	I do not understand the dialogue	General Reference
FB(63):	I don't understand the vocab.	General Reference
MB(69):	I'm not sure what "*tapes todas las goteras*" means.	Phrasal Focus
FB(30):	I don't understand what the condor wants Pepe to do in order to get his promotion	Inference
FB(74):	I don't understand	Evaluative
FB(105):	its funny because of the use of the word	Evaluative
FB(66):	I don't understand it	Evaluative
FB(43):	I don't understand the comic.	Evaluative

These examples demonstrate the tendency of first-year learners to attribute poor comprehension to a lack of vocabulary and reliance on L1 answers provided in the multiple-choice section. In contrast, second-year participants appeared to utilize the multiple-choices answers and context provided by the illustrations more effectively. When addressing the written responses as a group, almost 50% of all participants referenced General Vocabulary. It was predicted that learners would provide Individual Word Focus comments due to the nature of semantics-based humor. Notably, only 5 of the 43 respondents commented on an individual lexical item.

Of the 25 first-year learners who gave written responses, none identified an individual lexical item or phrase to have inhibited comprehension. Instead, first-year learners mentioned a total lack of comprehension (i.e. *I don't understand)* or cited vocabulary (i.e. *I don't understand the words*) when writing a response. In addition to attributing a lack of comprehension to overall lexical deficiencies, there was no indication from the written comments that first-year learners utilized the context of the comic (provided by the illustrations) to infer or predict meaning.

By contrast, second-year learners utilized their lexical base in conjunction with the translations provided in the multiple-choice section to identify areas of miscomprehension. Five of second-year's participants mentioned specific words that caused confusion. For example, participant #81 mentioned the final frame and identified the lexical items he did not understand. Participant #83 mentioned two English words ('basement' and 'roof') used in the multiple choice section, demonstrating that she utilized the multiple-choice answers. Participant #69 mentioned a phrase from the final frame and Participant #30 appeared to infer meaning from the context by using items found in the multiple-choice section. However, not all second-year participants clarified their misunderstandings; nine participants made General References to Vocabulary and four made an Evaluative Comment.

4.3.1.2 Summary

The overall comprehension of semantics-based humor and the written comments illustrate the difficulty learners have with multiple-meaning words. Previous studies have suggested that competence in using and comprehending multiple-meaning words, or words with two or more meanings, is a prerequisite for the development of other figurative language forms (Gorman-Gard, 1992; Hamersky, 1995). With regard to meaning discrimination, Bensoussan and Laufer (1984) found in their study of lexical guessing that words with multiple-meanings elicited the largest number of errors in comprehension of words. They discovered that learners who were familiar with one meaning of a word did not abandon this meaning even when it did not fit the context.

This one-to-one tendency, also discussed by Andersen, is further explored in Chapter 5 when we examine results from the think-aloud protocol (Andersen, 1984, 1993). Wiig and Semel (1984) state that students must be able to classify, define, and redefine multiple meaning words before they can successfully comprehend other figurative language forms. The data presented above lend support to these claims and imply that multiple-meaning words may be the final stage of humor comprehension.

In fact, research in applied linguistics has shown the need to deemphasize grammar and grammatical rules and to give more attention to strengthening learners' lexical base (Schmitz, 2002). "Knowing words is the key to understanding and being understood. The bulk of learning a new language consists of learning new words. Grammatical knowledge does not make for great proficiency in a language" (Vermeer, 1992, p. 147). The quantitative results from the questionnaire and the supporting comments found in the present study lend support to such claims since many participants attributed their misunderstandings to poor vocabulary. Only three of the 301 written responses mentioned grammar, which may indicate that the grammatical function of the words was not needed to infer the meaning of new words in context. This finding is consistent with Parry's (1993) longitudinal study demonstrating a greater semantic than syntactic relationship between words and their inferred meanings. Her study suggests that knowing the grammatical function of a word or syntactic categories may not lead to an accurate semantic representation of the word in context. The think-aloud portion of this study further supports the need to place increased emphasis on vocabulary learning.

Chapter 5 presents the qualitative data yielded during the think-aloud protocol. These data are addressed by comprehension strategies and processing errors discovered during the analysis phase.

CHAPTER 5: RESULTS FROM THINK-ALOUD PROTOCOL

5.1 Introduction

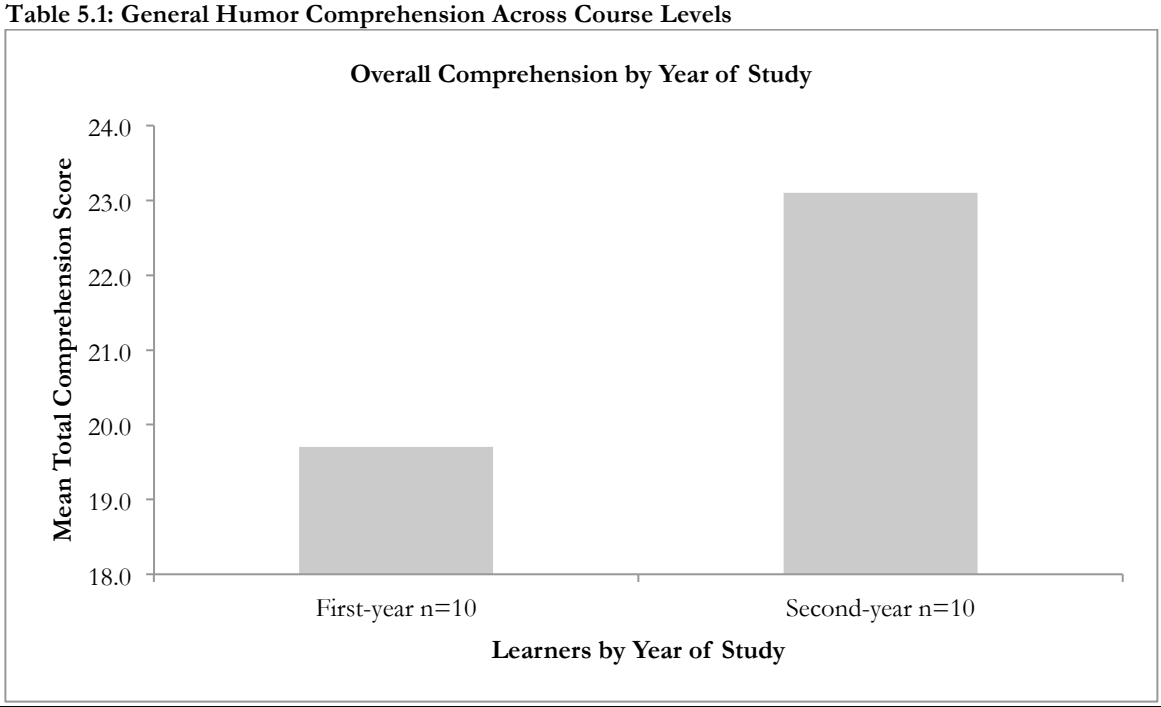
While Chapter 4 examined L2 learners' ability to *identify* humorous implicatures; this chapter focuses on L2 learners' ability to *detect and explain* humorous implicatures. In Chapter 4, the study participants were asked to identify the correct multiple-choice answer. In contrast, during the think-aloud study, participants did not have access to L1 multiple-choice answers and were asked to describe the humor verbally and explain what they understood. The previous chapter offered generalizations, but the current chapter presents a more detailed approach and complements the frequencies found during the multiple-choice questionnaire. The data in this section represent the words and the verbal processes that a different set of learners used to determine humorous incongruities. The discussion examines the participants' cognitive processes and comprehension strategies that were revealed via a think-aloud protocol.

This chapter begins to fill a gap in the research by identifying the cognitive processes that this group of learners implemented when confronted with humorous implicatures. Specifically, it identifies the processes and strategies that learners use to read L2 comic strips; as revealed through their think-aloud comments. The following section discusses the overall finding of the think-aloud study with reference to the comprehension strategies implemented and processing errors that occurred.

5.2 General Comprehension By Year of Study

The think-aloud protocol did not seek to address a progression of total comprehension across course levels because the sample size was too small (five learners per semester). Therefore, the learners were divided according to year of Spanish study (first-year vs. second-year learners) and their results on the humor questionnaire were analyzed via a one-way ANOVA with a mean comprehension level score serving as the dependent variable and the year of study as the independent variable. The comprehension level score was determined for learners by summing their total comprehension level scores during the think-aloud protocol (1 point = *minimal*, 2 points = *partial*, 3 points = *complete*). Therefore the total comprehension level score could vary from 14 to 42 points. For example, Nate (a second-year learner) scored minimal comprehension on three comics (3 points), partial comprehension on seven comics (14 points), and complete comprehension on four comics (12 points) for a total comprehension level score of 29 points. After a total score for each learner was determined, a mean score for year of study (i.e. first-year vs. second-year) was found (see Table 5.1). The results did not demonstrate a significant relationship between scores and year of Spanish study [F (1,18) = 2.731, p = .116], as shown in Table 5.1.

Table 5.1: General Humor Comprehension Across Course Levels



Year of Study	Mean	Std. Error	95% Confidence Interval	
			Lower	Upper
First-Year (n = 10)	19.700	1.0440	16.398	23.002
Second-Year (n = 10)	23.100	1.7729	17.493	28.707

These findings do not support results obtained from the learners who completed the multiple-choice questionnaire, in which the year of study was found to have a significant correlation with humor comprehension. It should be noted that the variation in mode of assessment most likely affected the results. The multiple-choice questionnaire included one correct answer, whereas the participants of the think-aloud protocol were measured by degree of comprehension. As noted above, this distinction is most likely attributable to the testing methods used. The participants in the multiple-choice survey had to *identify* the correct L1 answer from among options provided in English, whereas the think-aloud participants were required to *detect* and *explain* humor without the use of L1 aids. The results indicate that it was significantly easier for L2 learners to detect

humorous implicatures when L1 multiple-choice answers were present. Without the option of using L1 multiple-choice answers, comprehension of the comics was lower.

The data in Table 5.1 reveal that mode of assessment (multiple-choice vs. an open-ended think-aloud) was an important contextual factor that influenced results. To contrast the two studies, 11.4% of first-year and 20.0% of second-year learners accurately explained the humor during the think-aloud protocol, whereas 38.6% of first-year and 55.8% of second-year learners could identify the correct answer on the multiple-choice questionnaire. Thus, the multiple-choice format seems to have placed fewer cognitive demands on learners because the principal requirement was to recognize the humor rather than to explain it. The multiple-choice test takers in a study by (Cohen, 1984) reported that they had matched words and phrases in the distracters or the stem with those in the passage. They had read only part of the passage and had stopped reading distracters once they had identified an answer. In contrast, the think-aloud protocol demanded higher cognitive functioning because it did not allow access to L1 options. During the think-aloud protocol, participants were required to:

(1) combine the contextual information in the comic strip (the drawings and lexical items) with a figurative interpretation (the humorous implicatures) of each comic;
(2) infer meaning from this combination; and
(3) successfully verbalize their comprehension.

While both the multiple-choice questionnaire participants and the think-aloud participants depended on background experiences, text familiarity, and prior knowledge of L2 Spanish, the think-aloud participants did not have direct access to the L1 words and

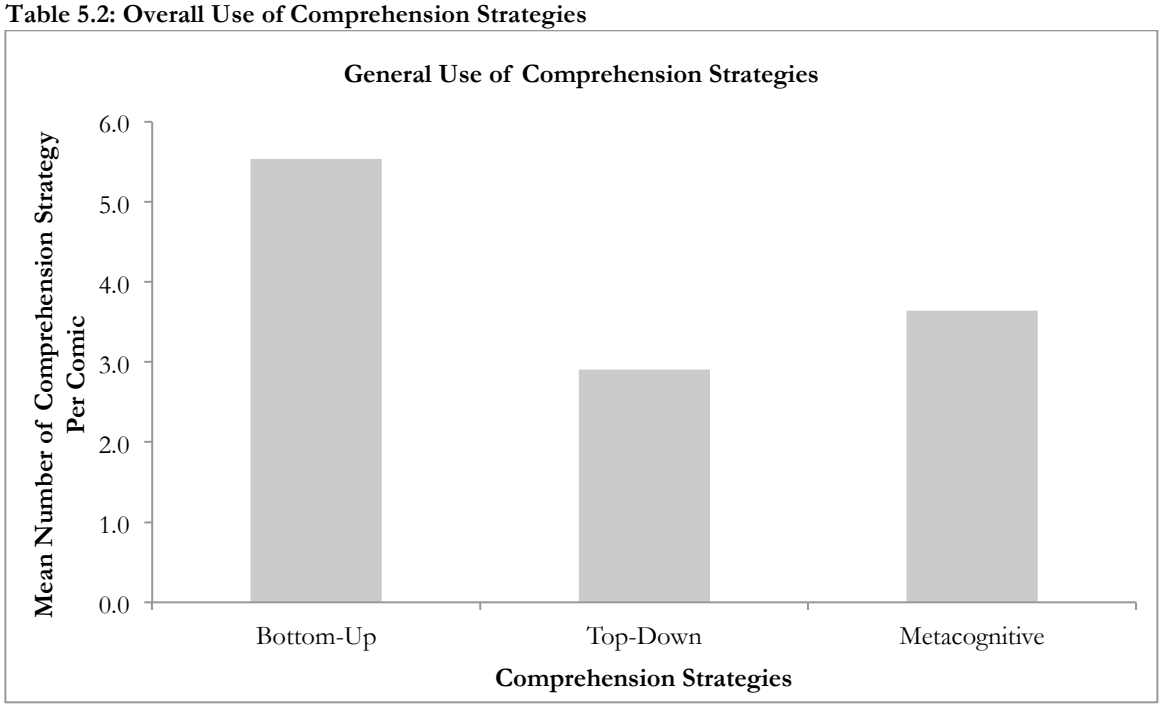
phrases from the multiple-choice options. Therefore, this testing format may have placed larger cognitive demands on these learners. The data indicate that the ability to explain an incongruity or punch line was challenging for all learners regardless of year of study; however, successful participants were more efficient at implementing effective comprehension strategies and overcoming error processing to achieve comprehension. The following section presents the overall comprehension strategies used and the processing errors that occurred during the think-aloud protocol. After the data are presented, a discussion of the findings features six individual participants, two from each comprehension level. These representatives were chosen because they exemplify the strategies and processing errors made by each level. Their think-aloud transcriptions were compared to others of the same level and were chosen because their comments reflect the quantitative data presented below.

5.3 Overall Comprehension Strategy Use and Error Processing

Every utterance was coded, classified into a particular comprehension strategy, and tested to find significance between course level and overall comprehension success. An ANOVA conducted with confidence rating found no significant main or interaction effect ($p > .05$) between course level and comprehension strategy use or error processing. Therefore, in accordance with the findings from Table 5.1 that course level (first-year and second-year Spanish) did not correlate with overall humor comprehension success, the following section presents overall comprehension strategies used. A one-way ANOVA determined a significant difference between comprehension strategies [F (2,38) = 33.06,

$p < .05$], specifically that bottom-up strategies were the dominant choice. A mean score of comprehension strategies was determined by finding the average number of times participants used the strategy per comic.

Table 5.2: Overall Use of Comprehension Strategies



Comprehension Strategy	Mean	Std. Error	95% Confidence Interval	
			Lower	Upper
Bottom-Up	5.536	.383	4.735	6.337
Top-Down	2.904	.360	2.149	3.658
Metacognitive	3.643	.482	2.635	4.651

The data support claims that there is a greater frequency of bottom-up processing in SLA, akin to results found in Horiba's (1990) study of native and nonnative readers of Japanese and Davis and Bistodeau's (1993) work on native and nonnative readers of French. The data in Table 5.2 demonstrate the tendency of participants to approach the text as single words or as sentence fragments, frequently commenting on the meaning of

individual lexical items. In addition, there is a pronounced dependence on restatement or paraphrasing (a bottom-up strategy), perhaps due to the type of text (comics) used.

When jokes or humorous stories are retold, the narrator typically restates or paraphrases the joke in order to elicit the humorous response expected. Each of the participants read the comic and explained what was understood. In order to 'explain' humor, it is natural for learners to employ the same techniques (restatement or paraphrasing) used when telling a joke in their L1 (Leow & Morgan-Short, 2004; Slobin & Welsh, 1971). According to Mahoney and Mann (1992),

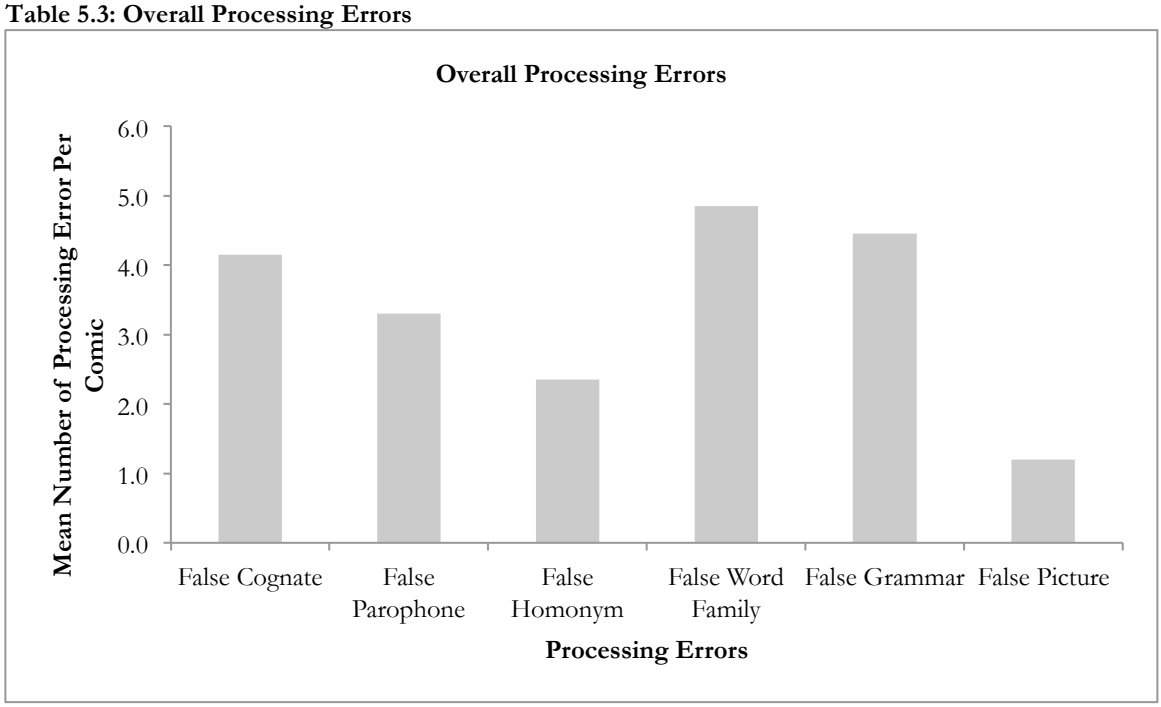
> Linguistic humor depends on a certain phrase or sentence being said in an exact way. When someone retells something, it is rarely done verbatim; it typically involves paraphrasing. If the child understood the joke as intended, he or she would retell the crucial portion verbatim and paraphrase parts of the remainder, but if he or she did not understand the joke, he or she would be as likely to paraphrase the crucial portion as any other portion. (p. 306)

Therefore, it was expected that learners would use this bottom-up strategy during the think-aloud protocol. In addition, this result could be due to the small number of lexical items found in each comic. Humor comprehension does depend upon the correct lexicon, and the participants may have focused on individual lexical items because they believed them necessary for comprehension. In some cases, an individual word may prohibit comprehension, but divergence between successful and unsuccessful

comprehension was apparent in the implementation of comprehension strategies and their control over processing errors.

A significant difference between error processing types was determined with a pair-wise comparison ANOVA [F (5,90) = 7.252, $p < .05$] with False Picture and False Homophone as the least common error types, illustrated in Table 5.3.

Table 5.3: Overall Processing Errors



Processing Errors	Mean	Std. Error	95% Confidence Interval	
			Lower	Upper
False Cognate	4.150	.634	2.819	5.481
False Paraphone	3.300	.604	2.031	4.569
False Homonym	2.350	.455	1.394	3.306
False Word Family	4.850	.797	3.176	6.524
False Grammar	4.450	.484	3.432	5.468
False Picture	1.200	.330	.507	1.893

The data indicate that while there were similarities in strategy use and processing errors among successful and non-successful participants, there was also considerable individual variation. Furthermore, given the variety of types and combinations of strategy

use reported during the protocols, the evidence does not support the position that one set of comprehension strategies was most effective. Rather, success was most often coupled with the execution of comprehension strategies and the ability to overcome processing errors. Individual learners differed in the types and combinations of strategies they used when confronting comprehension challenges, but it was the ability to overcome processing errors at the word level and the effective utilization of a variety of comprehension strategies that distinguished the more successful from the less successful participant. The following example was chosen because it presented no major obstacles to participants in regards to grammatical and lexical difficulty[36]. To explain the humor found in Comic 1: "Love", two distinct definitions for the lexical item "love" had to be identified.

[36] It should be noted that this comic is based on the notion of "love" having two distinct meanings in the English-speaking tennis world. While this dual meaning is apparent in English, Spanish-speakers do not use the word *amor* in reference to the score "zero" in tennis. Instead, Spanish-speakers use *cero* or *nada*.

Comic 1: "Love" [37]

Interview 5.1: Liam commenting on Comic 1[38]

> Liam: So, this guy is asking how could, um … call cause I guess it's like when they call it love in tennis it means zero. And he says how can people call it love when it means nothing or zero.

Liam initiated his protocol with a restatement of the comic, a bottom-up approach. After this approach, he changed strategy type and switched to an evaluative comment, "I guess", followed by an inference, utilizing prior knowledge, "it's like when they call it love in tennis it means zero". Then Liam returned to paraphrasing to deliver the punch line, "And he says how can people call it love when it means nothing or zero". By utilizing a combination of top-down and bottom-up strategies, Liam avoided an exact translation of each lexical item; thereby he committed no processing errors. Liam diverged from paraphrasing to explain the dual interpretations of the word 'love' but

[37] Ziggy: How can so many people get so excited with a game in which love means zero?
[38] Rating = Complete Comprehension

returned to give his interpretation of the comic. Liam initiated and concluded this protocol with a bottom-up strategy and correctly explained the humorous implicatures. This example is a demonstration of successful participants and their ability to ignore irrelevant words, identify main ideas, change strategies, hypothesize, and infer meaning from prior knowledge.

In the following example, Carl committed various processing errors but still explained the humor in Comic 1.

Interview 5.2: Carl commenting on Comic 1[39]

> Carl: "Why don't more people play?" … He is saying that people get emotional when they play and *amor significa zero*. I get the middle part like *emocionarse con un juego*, but I don't get love significant zero or that love is equal to zero. Oh! How can you love a game where love is zero like in tennis? Is that what he is asking? Okay.

Carl began his explanation with a word-for-word, bottom-up restatement of the comic with, "Why don't more people play?" He slightly misinterpreted the initial question word, *Cómo*, a False Word Family error. Carl also misinterpreted the meaning of the word *tanta* by translating it as "more" instead of 'many', another False Word Family error. Carl continued his interpretation of the comic with bottom-up strategy use but finished with two processing errors, a False Paraphone and a False Grammar mistake. The False Paraphone occurred when he translated the word *con* as "when", instead of the correct translation 'with'. The lexical item *con* is similar in appearance to the adverbial *cuando* 'when'. This example illustrates the 'look-alike' problem found with False

[39] Rating = Complete Comprehension

Paraphones. He also mistakenly translated the word *juego* 'game' as "they play". This mistake was considered a False Grammar error because the Spanish word *juego* can mean the first-person, singular, present tense verb form 'I play' or the noun 'game'. If he had used it in the first person 'I play', it would have been considered a False Homonym mistake, but Carl read the word *juego,* assumed it was a verb form and changed it into "they play", most likely to conform to Spanish subject-verb agreement rules. Most likely, the *gente* 'people' from his initial translation was the subject.

Subsequently, he began metacognitive strategy use with a response analyzing his overall comprehension: "I get the middle part like *emocionarse con un juego*, but I don't get love significant zero or that love is equal to zero". The participant seemed to be evaluating his areas of comprehension when he referenced "the middle part" and the areas he did not understand. This clarification of comprehension may demonstrate a metacognitive awareness of his comprehension processes. In this case, Carl had knowledge about his cognitive resources and the skills required to complete the task. During this metacognitive process, he produced another False Paraphone error, translating *significa* 'means' (a verb) as "significant," but almost immediately reinterpreting it as a verb by reanalyzing the suffix and choosing a closer translation, "equal to".

Ultimately, Carl re-evaluated his approach and appeared to process the information with prior world knowledge, making inferences and accurately explaining the humor in a global manner: "Oh! How can you love a game where love is zero like in

tennis?" He paraphrased the comic and explained the humor using a top-down approach of referencing prior knowledge "like in tennis". He finished with a final, metacognitive question, "Is that what he is asking? Okay." Unlike Liam, his think-aloud was an example of complete comprehension in which the learner committed errors but overcame them and abandoned an erroneous word-for-word translation for a more meaningful explanation. Carl accurately combined three comprehension strategies (top-down, bottom-up, and metacognitive) to overcome his processing errors (False Word Family, False Paraphone, and False Grammar).

The most successful learners made minor translation errors, but they did not allow these obstacles to dominate their overall comprehension of the text because they effectively implemented various comprehension strategies. Like those in the complete comprehension group, Greg initiated his approach to the comic by utilizing the bottom-up method of paraphrasing but he was unable to achieve complete comprehension.

Interview 5.3: Greg commenting on Comic 1[40]

> Greg: He's saying it's hard not to play with emotion when the score is love, zero, I think. Or like, how am I suppose to play without emotion or something like that. I don't know. I understand it's like a pun on the score in tennis and how the score is kept in tennis.

This first sentence contained a False Grammar error with the translation "to play". Greg read the word *juego,* presumed it to be a verbal form, and simplified it as "to play". He also committed a False Paraphone error in the utterance "with emotion". The verb

[40] Rating = Partial Comprehension

emocionarse 'to get excited' appears similar to the noun *emoción* 'emotion'. Greg initiated his protocol with a restatement strategy; subsequently, he scanned the comic and attempted comprehension based on the words he could easily translate. By combining top-down and bottom-up strategies, he united the textual content (the drawings of the tennis racket) with an inference about sports ("score"). He utilized prediction and inference techniques with the word 'score' because there is nothing etymologically related in the comic. Thus, he inserted the word "score", anticipating that it (or a similar idea) would be found in a comic on tennis.

He continued with paraphrasing the comic but committed a False Word Family error, changing the word *con* 'with' from "with" to "without". After a final restatement of the comic, he ended the protocol with the metacognitive statement "I don't know". Greg represents a typical partial comprehension level learner in that he evaluated his comprehension of the text by describing the content he understood (tennis scoring methods), but was unable to synthesize his strategies, overcome errors, and explain the humor.

In the following example, Hilary approximated complete comprehension but failed to identify and overcome a crucial translation error.

Interview 5.4: Hilary commenting on Comic 1[41]

> Hilary: How can dumb people relate to a game where love means zero? It's talking about tennis.

---

[41] Rating = Partial Comprehension

Interview 5.4 began with the bottom-up strategy of restatement but she committed a significant False Paraphone error with the use of "dumb" for *tanta* 'so many'. The lexical item *tanta* is etymologically similar to the Spanish word for 'dumb', *tonta*. She correctly translated *gente* as "people" and used the word "relate" for *emocionarse*. This translation wasn't considered a processing error because, although the usage is not a direct translation of the word, it does approximate the real meaning. Her final statement, "It's talking about tennis", was a summation with reference to her background knowledge of tennis, a top-down approach. Hilary may have believed that she understood the implicatures and textual content within the comic, and she did comprehend elements, but her incorrect translation of the word *tanta* impeded her complete comprehension. Hilary would have been rated higher on her comprehension of Comic 1 if she had correctly translated the word *tanta*. While she may have been unaware of her translation error, she did not attend to the incongruity between her interpretation and the true meaning. She did not adjust strategies to overcome this processing error. In this case, the individual lexical item was not paramount to comprehension; perhaps a more successful participant would have employed other strategies.

Learners who minimally comprehended humorous implicatures typically were unable to combine comprehension strategies into a final, cohesive statement to verbalize humor. For example, Dave begins with a general introduction to the textual content of the comic, after which he initiates a bottom-up strategy via a paraphrase of the comic.

Interview 5.5: Dave commenting on Comic 1[42]

> Dave: Something about like "How is it that like fam, like family is emotional?" Like with the game of love is, I guess the same way, so is it like tough love or something? I don't know if he is trying to say that or
> Interviewer: What does the last part say?
> Dave: Like significant love zero? I guess significant love that matters or …

His first processing error occurred with the incorrect translation of *gente* as "family" instead of 'people', a False Word Family mistake. He continued but adjusted his approach to a top-down method by using general knowledge to make associations with the information provided in the text, an inference strategy: "Like with the game of love is, I guess the same way, so is it like tough love or something?" Dave speculated that, based on the text and illustration, perhaps the character was referencing the colloquial expression "game of love," but followed it with a metacognitive statement, "I don't know if he is trying to say that or …"; then, using background knowledge of a colloquial expression, he extended his reference to "tough love or something".

After a metacognitive statement and encouragement from the interviewer to continue, he returned to his analysis, "Like significant love zero?" In so doing, he committed a False Paraphone error, but a grammatically different one than that by Carl, who used the same translation for *significa*. Dave changed the verb *significa* 'means' into an adjective, "significant", and moved it in front of the noun "love". He may have moved it because the word *significa* appears after the word *amor*. Syntactically, adjectives generally precede nouns in Spanish word order. Dave returned to a combination of

[42] Rating = Minimal Comprehension

paraphrasing and inferring: "I guess significant love that matters or …"; however, his inability to correct the False Word Family and False Paraphone errors prohibited him from complete or partial comprehension.

The final example highlights another minimum comprehension by a learner who demonstrates unsuccessful strategy implementation and error difficulties.

Interview 5.6: Eddie commenting on Comic 1[43]

> Eddie: I can't tell you why that's funny or most of the words. I know *emocionarse* is probably something with emotion, but I can't really … oh, to be emotional … emotional people? To play with that … love … I don't know what *cero* or *tanta* means, and it's throwing me off for the whole sentence.

Eddie initiated his explanation of Comic 1 with a metacognitive statement, "I can't tell you why that's funny or most of the words". With this statement, he mitigated his comprehension of the text, perhaps because his explanation proved faulty. He initially focused attention on an individual word and hypothesized that *emocionarse* was probably related to the English word 'emotion', then continued with two emotion-based options, "to be emotional" and "emotional people," thereby committing a False Paraphone error. *Emocionarse* follows the word *gente*, and Eddie, like Dave, speculated that it was being used as an adjective, "emotional people". Although Eddie tried various interpretations, he was unable to differentiate between paraphones for *emocionarse*. Although error processing was apparent at all comprehension levels, the distinction in levels was the

[43] Rating = Minimal Comprehension

ability to navigate the errors or overcome them to achieve partial or complete comprehension.

Like Greg, Eddie struggled with the word *juego* 'game', translating it as a verb, thus committing a False Grammar mistake, "To play with that … love …" This phrase was also his only attempt at paraphrasing. He ended with an individual word focus and metacognitive statements, "I don't know what *cero* or *tanta* means, and it's throwing me off for the whole sentence". Even though Eddie utilized bottom-up and metacognitive strategies, he was less proficient at understanding the humor than Liam and Hilary. Furthermore, he did not apply any top-down strategies, in turn missing all humorous implicatures. As this example demonstrates, Eddie represents most minimal-comprehension participants in his inability to utilize comprehension strategies successfully. Instead, they were frequently inhibited by word-level problems. Rarely did these learners correct or notice errors, often directing their efforts at single words without determining the significance of these words. These missteps led to further confusion and miscomprehension.

5.3.1 Summary

Various studies have found that successful L2 learners tend to process entire passages, return to reinterpret, consider what they know about the topic, hypothesize about what might come next, and guess the meaning of unknown words. Less successful L2 learners focus on the meaning of individual words, pay attention to text structure, reread isolated difficult passages only, never or rarely hypothesize, and resist skipping

unknown words (Barnett, 1990; Block, 1986; Saricoban, 2002). Although previous studies have suggested that successful learners are inclined to use memory, metacognitive, and top-down compensation strategies far more than less proficient learners and that less proficient learners' strategies tend to be more 'local' or 'bottom-up', reflecting a desire to treat text comprehension as a decoding rather than a meaning-making process, the present study does not support this tendency (Singhal, 2001). The present data suggest that successful learners may implement a variety of processing strategies to comprehend L2 humor.

The successful learner was able to articulate the humorous implicatures found in the comics by varying comprehension strategies when a particular set did not facilitate comprehension. In addition, these learners were capable of overcoming processing errors, by skipping mistranslated words or reinterpreting the mistranslation. Even when processing at the word level, they centered on meaningful and logical relations to and within the material, "even to the point of disregarding, in a certain sense, the actual printed text" (Gascoigne, 2005, p. 5). As demonstrated by Liam and Carl, successful learners relied on bottom-up strategies, such as paraphrasing and restatement, but were successful at utilizing other comprehension strategies, such as inference and prior knowledge.

These participants tended to start with a direct translation and then tapped into broader prior knowledge. In general, they did not concentrate on metacognitive strategies such as evaluating the process or questioning their comprehension, but instead focused on

metacognitive comments that aided their comprehension. Although their bottom-up approaches of restatement and paraphrasing were not flawless, when combined with the top-down method and metacognitive analysis, these learners adjusted approaches to attain higher comprehension. Similar to the study by Olson, Duffy, and Mack (1984), they distinguished among important information and unimportant details as they read, were able to use cues within the text to anticipate information, and related new information with previously stated information.

In contrast, Hilary would have scored higher on her comprehension of Comic 1 had she correctly translated the word *tanta*. After this error, she did not attend to her incongruent translation. Her error with *tanta* was typical of this level, demonstrating an inability to evaluate mistranslations and take a new approach. Overcoming errors was advantageous in that the ability to ignore irrelevant or unknown words often leads to increased comprehension. However, errors proved problematic when pseudo-similar words appeared in the text, as was the case with Hilary, and the learners associated the pseudo-similar word with words already in their L2 lexicon. In such cases, false analogies occurred and led to what Huckin and Bloch (1993) called a "mistaken ID" (p. 166), a process whereby the learner mistakes a word for another, similar-looking word. This type of processing error often confused the learners and kept them from achieving higher comprehension.

Learners like Hilary who were capable of partial comprehension were similar to participants who had complete comprehension in that they implemented various

comprehension strategies, but committed more processing errors, some of which they were unable to overcome. With partial comprehension, the participant understood and explained portions of the comic but was unable to explain the humor fully. In other words, these learners may have identified each lexical item but were unable to synthesize the information and articulate the linguistic play. Hilary's excerpt demonstrated the ability of participants to understand portions of humor without being able to explain the entirety of the comic.

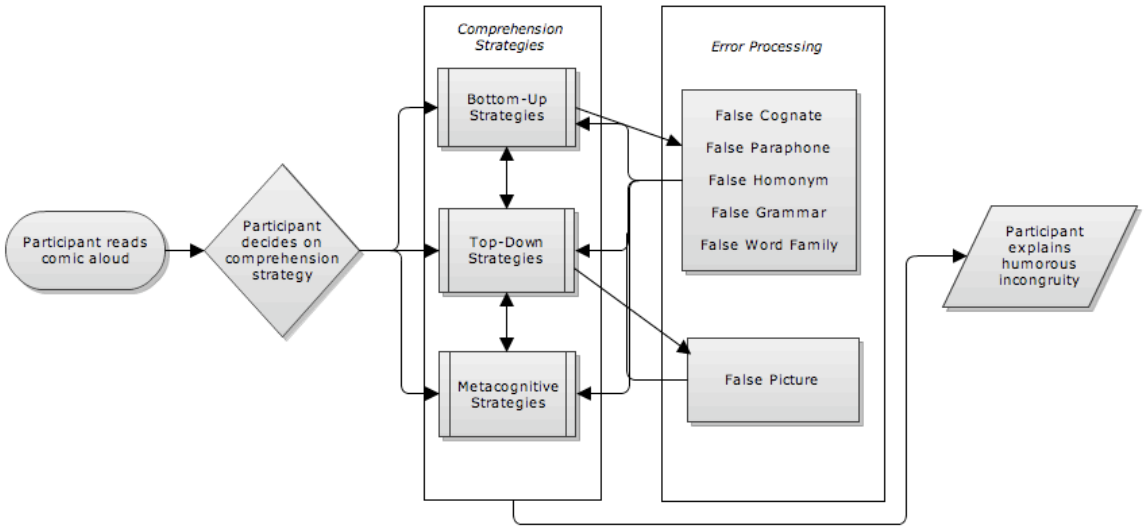
Overall, the partial comprehension participants produced more egregious processing errors, thus confounding full comprehension. They were less likely to overcome their errors, which impeded overall humor comprehension; however, the minimum comprehension learner was the least effective at implementing comprehension strategies and overcoming processing errors. For example, Dave combined a bottom-up approach with some top-down hypothesizing but was unable to verbalize the humorous intent. Dave and Eddie's think-aloud protocols contained metacognitive statements, but these comments did not help overcome errors or overall comprehension. It should be noted that complete and partial comprehension learners committed similar errors but the distinction between levels was the ability to navigate errors by ignoring or overcoming them to achieve partial or complete comprehension.

The think-aloud protocols revealed that no single set of comprehension strategies significantly contributed to success in humor comprehension. Learners from all comprehension levels appeared to use similar strategies while interpreting the comics;

however, complete comprehension learners applied strategies more effectively and appropriately. In essence, successful participants had an enhanced metacognitive awareness of effective strategies, which in turn may have led to greater comprehension abilities. Contributing to metacognitive research, the present study lends support to claims that metacognitive awareness contributes to a conscious understanding of comprehension (Baker & Brown, 1984; Carrell, 1989; Singhal, 2001), along with the deliberate application of one or more strategies to correct comprehension problems.

I propose the following flow chart as a demonstration of the possible thought processes of L2 learners when presented with linguistic-based humor. All learners began the protocol by initially reading the comic aloud and choosing a comprehension strategy.

Figure 5.1: Flow-Chart of L2 Linguistic Humor Processing



Once a comprehension strategy is chosen, learners could proceed directly to an explanation of the humor, to a different strategy, or to a processing error. When a learner produces a word-based processing error (False Cognate, False Paraphone, False

Homonym, False Grammar, or False Word Family), it inherently generates from a bottom-up comprehension strategy. In contrast, a False Picture error is generated from top-down strategies because it presumes that the learner is focusing on contextual cues, such as illustrations, rather than lexical information. Finally, a metacognitive strategy approach can be followed by a different strategy or may lead to an explanation. In the following phonology-based example, Liam illustrates how these strategies can flow and complement each other. Thus he demonstrates the successful implementation of comprehension strategies to achieve partial comprehension when confronted with an unfamiliar lexical item.

Comic 9: "Waiter" [44]

Interview 5.7: Liam commenting on Comic 9: "Waiter" [45]

Liam: (read comic aloud) I don't know what *brasas* is, but I think something happened, like, they were waiting for their food and the waiter comes and brings it out, um, and they apparently waited a long time because the, I guess it's a bird or something, says that his hunger was lost already. The

[44] Companion: Here comes [our] genius [waiter], buddy.
Condor: Yes, buddy, I'm dying of hunger.
Waiter: Your order, mist…er!
Condor: I told you grilled not spilled, stupid! (literally: grilled and not on my arms)
[45] Rating = Partial Comprehension

> waiter comes out and drops the food and the little bird guy says, um, something. I don't know what *brasas* is, but he says, "not on the arm, *jeton".* *Jeton* is like a mad person or an upset person. But I don't know what this (pointing) *brasas* means but I'm assuming it … he said not on his arms. So, whatever *brasas* means, maybe it's a way to prepare a meals or a certain plate, or something.

After reading the comic aloud, Liam initially focused on the individual lexical item *brasas* 'grill', skipped over it, and reapproached the understanding with a top-down strategy by placing the comic within a context. Throughout the protocol, Liam primarily used bottom-up strategies (e.g., paraphrasing) with contextualizing comments (e.g., the visual aspects) and the occasional metacognitive statement (e.g., "I don't know" or "I guess"). Midway through the protocol, Liam committed a False Grammar error when he misinterpreted *Ya me corto de hambre* 'I'm dying of hunger' as "His hunger was lost already," but he continued with paraphrasing and his erroneous interpretation did not impede comprehension.

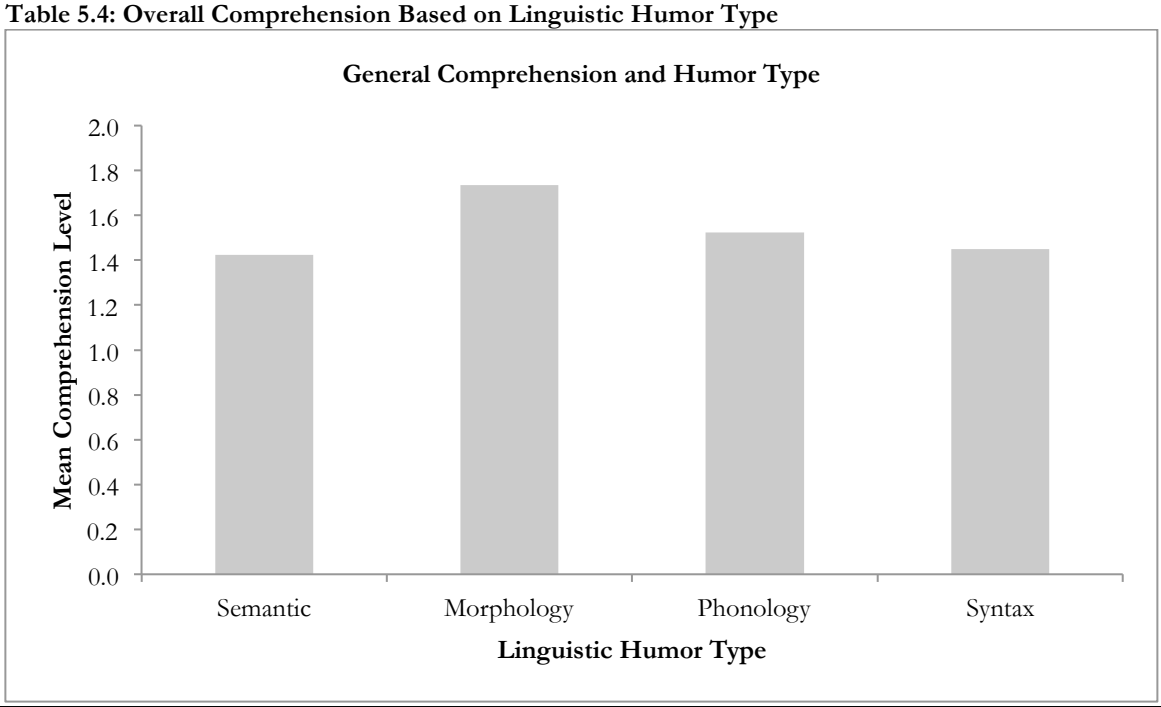
Although he was unfamiliar with the word *brasas,* he formed a hypothesis based on prior world and linguistic knowledge*:* "But I don't know what this (pointing) *brasas* means but I'm assuming it … he said not on his arms. So, whatever *brasas* means, maybe it's a way to prepare meals or a certain plate, or something". The strategy of discussing an individual word and a probable definition was a useful approach and demonstrated the ability to combine a bottom-up (individual word focus) strategy with a top-down one (inference based on prior knowledge) to attain partial comprehension. Second-year participants in the questionnaire group demonstrated this combination of strategy use in that they used the L1 answers to their advantage with higher frequency and success than

first-year learners. The successful learner often circumvents or ignores the initial error via different comprehension strategies, whereas the unsuccessful learner often focuses on the source of confusion without attempting additional approaches. The following section addresses the second aspect of the humor questionnaire: the comprehension order of the four linguistic humor types.

5.4 General Comprehension Based on Linguistic Humor Type

In order to discover the order in which humor types may become comprehensible to learners, a repeated-measures ANOVA test found a significant difference between linguistic humor types [F (3,57) = 2.830, $p < .05$]. A mean comprehension level score was determined for each linguistic humor type (1 point = *minimal*, 2 points = *partial*, 3 points = *complete*). As shown in Table 5.4, morphology-based humor elicited the highest level of comprehension. It was expected that learners would acquire some humor types before others and that the order of development would mirror the results found in the multiple-choice questionnaire. In the multiple-choice questionnaire, semantics-based humor had the lowest comprehension score (30%) whereas the other linguistic-humor types had similar comprehension levels (50%). In the think-aloud study, it was predicted that this same tendency would continue; however, the present results did not support the data from the multiple-choice questionnaire. The following section addresses the results from the study, particularly that morphology-based humor had a significantly higher mean comprehension score (1.73) compared to the other humor types (1.47).

Table 5.4: Overall Comprehension Based on Linguistic Humor Type



Linguistic Humor Type	Mean	Std. Error	95% Confidence Interval	
			Lower	Upper
Semantics	1.425	.104	1.207	1.643
Morphology	1.733	.092	1.540	1.927
Phonology	1.525	.102	1.311	1.739
Syntax	1.450	.109	1.221	1.679

Due to the nature of the think-aloud protocol, it appears that morphology-based humor did not pose the same level of ambiguity as other linguistic elements. Perhaps because participants read aloud the comedic texts and thereby naturally noticed morpheme segmentation in the process. It was first observed by Fowles and Glanz (1977) that the abilities necessary for resolving linguistic humor, particularly the manipulation of morphemes and phonemes, might be critically associated with success in learning to read. As seen in the present investigation, morphology-based humor success may extend beyond the ability to read and be related to spoken verbalization of the comic.

As discussed in the previous chapter, multiple-choice questionnaire participants took the survey during class time in a computer lab with their fellow classmates; they did not have the opportunity to verbalize the individual comics aloud. In contrast, the think-aloud participants were encouraged to read the comic aloud in Spanish before discussing their comprehension. Perhaps reading the comic aloud naturally focused their attention on the manipulation of words at the morphological level. Morphological awareness links phonological and semantic facets of language (Carlisle & Nomanbhoy, 1993; Ravid & Geiger, 2009). Therefore, the participants must have the abilities required to decode orthography—that is, they must have phonological, morphological, and semantic awareness. Morphological humor requires that the recipient attend to syllables within words and it occurs when a bound morpheme is understood as a separate independent morpheme (Green & Pepicello, 1978; Pepicello, 1980). Take the following riddles:

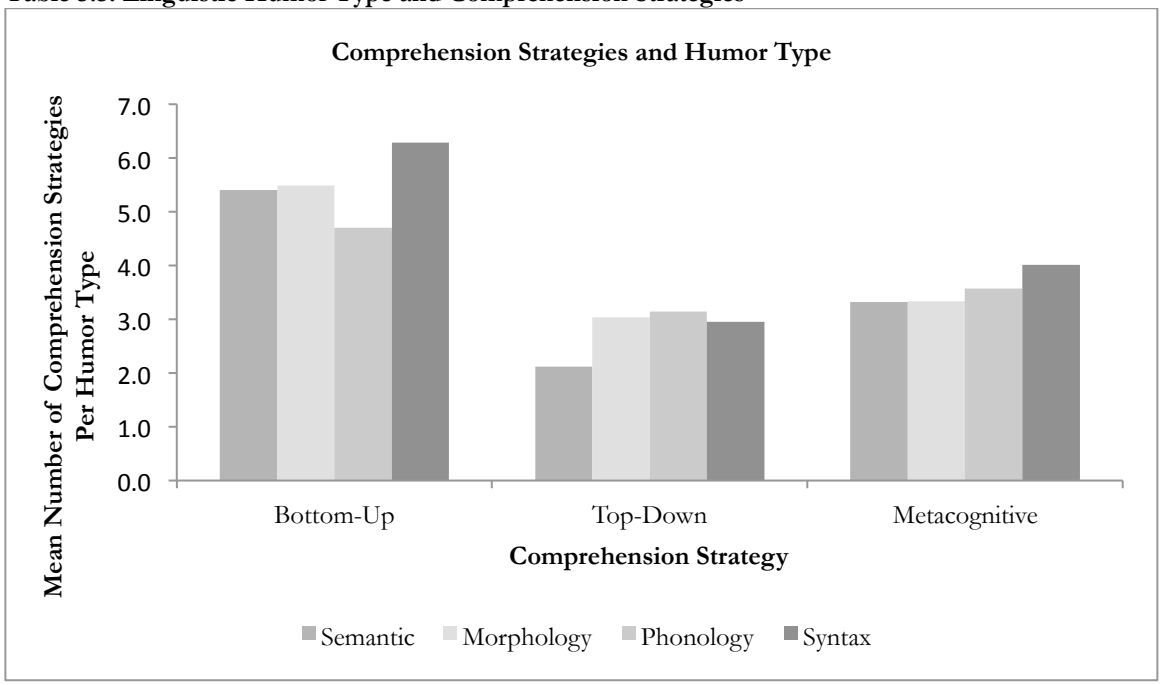
(1) A: If a dog lost his tail, where could he get another one?
B: At a re*tail* store. (Mahoney, 1992)

(2) A: What animal unlocks doors?
B: A mon*key.* (Gill, White, & Allman, 2011)

In example (1), the morpheme 'tail' is treated as an independent lexical item. In example (2), the morpheme 'key' is taken as an individual word. Unlike the multiple-choice subjects, participants of the think-aloud were not distracted by L1 answers (because they were not provided) and could focus on the linguistic aspects they understood.

In addition to the overall comprehension levels based on humor type, the think-aloud protocols were analyzed based on comprehension strategies and error processing. A two-way repeated measures ANOVA found no significant difference in effect between linguistic humor type and comprehension strategies [F (3,57) = 2.102, p = .110].

Table 5.5: Linguistic Humor Type and Comprehension Strategies

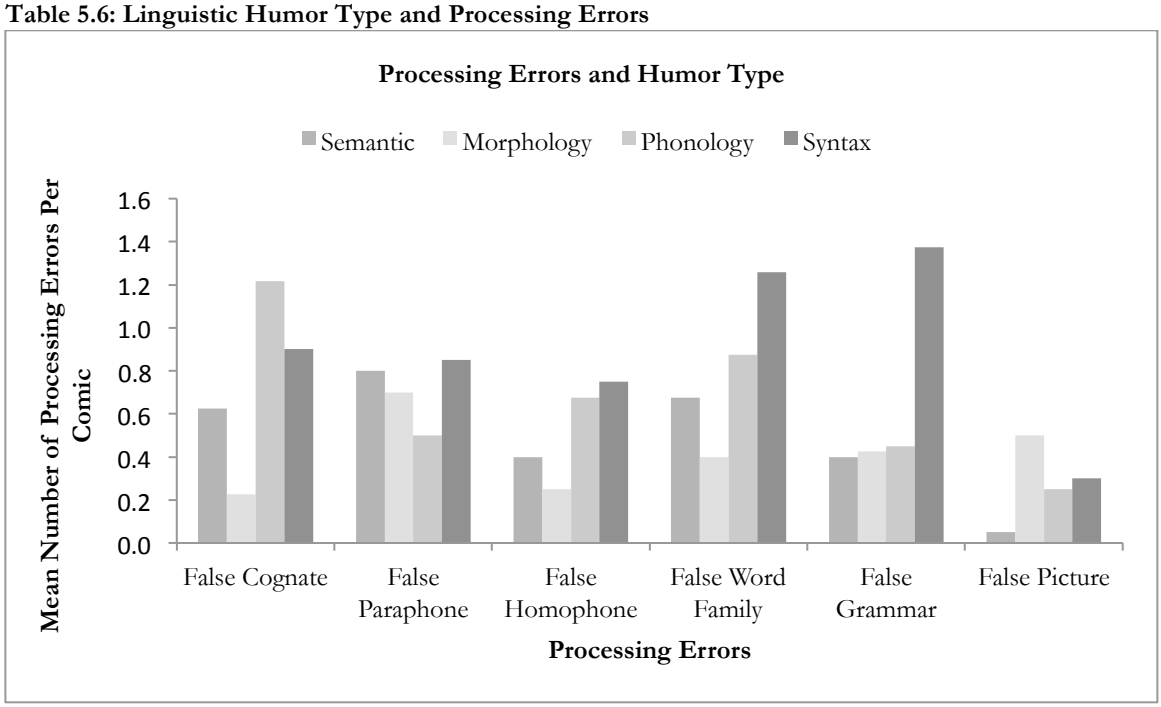


Linguistic Humor Type	Comprehension Strategy	Mean	Std. Error	95% Confidence Interval Lower	Upper
Semantics	Bottom-Up	5.400	.552	4.245	6.555
	Top-Down	2.125	.294	1.509	2.741
	Metacognitive	3.325	.464	2.355	4.295
Morphology	Bottom-Up	5.483	.527	4.381	6.586
	Top-Down	3.033	.480	2.029	4.038
	Metacognitive	3.333	.601	2.076	4.591
Phonology	Bottom-Up	4.700	.383	3.899	5.501
	Top-Down	3.138	.546	1.995	4.280
	Metacognitive	3.575	.461	2.610	4.540
Syntax	Bottom-Up	6.290	.565	5.107	7.473
	Top-Down	2.950	.309	2.304	3.596
	Metacognitive	4.010	.611	2.732	5.288

The data in Table 5.5 demonstrate that humor type does not affect comprehension strategy use. In other words, regardless of the type of humor, bottom-up strategies were

the preferred method of humor comprehension. However, there was a significant main effect of processing errors and humor type, validated through a pair-wise comparison [$F(3,57) = 9.142, p < .05$], demonstrated in Table 5.6.

Table 5.6: Linguistic Humor Type and Processing Errors



Linguistic Humor Type	Processing Error	Mean	Std. Error	95% Confidence Interval	
				Lower	Upper
Semantics	False Cognate	.625	.214	.177	1.073
	False Paraphone	.800	.133	.522	1.078
	False Homophone	.400	.112	.165	.635
	False Word Family	.675	.257	.137	1.213
	False Grammar	.400	.112	.165	.635
	False Picture	.050	.050	-.055	.155
Morphology	False Cognate	.225	.106	.004	.446
	False Paraphone	.700	.282	.110	1.290
	False Homophone	.250	.123	-.007	.507
	False Word Family	.400	.134	.120	.680
	False Grammar	.425	.142	.128	.722
	False Picture	.500	.136	.216	.784
Phonology	False Cognate	1.217	.225	.747	1.687
	False Paraphone	.500	.154	.178	.822
	False Homophone	.675	.186	.286	1.064
	False Word Family	.875	.235	.384	1.366
	False Grammar	.450	.185	.064	.836
	False Picture	.250	.099	.042	.458

Syntax	False Cognate	.900	.118	.653	1.147
	False Paraphone	.850	.150	.536	1.164
	False Homophone	.750	.123	.493	1.007
	False Word Family	1.259	.147	.951	1.567
	False Grammar[46]	1.375	.118	1.128	1.622
	False Picture	.300	.105	.080	.520

The data in Table 5.6 may help clarify why morphology-based humor had the highest level of comprehension. Recall that a cognate is a word with similar orthographic and semantic characteristics in two languages, such that the spelling and meaning of a word and its cognate are highly similar. For example, rapid and *rápido* are Spanish–English cognates. Indeed, teachers and researchers alike have reported on learners who appear to benefit from cognate recognition during L2 comprehension comprehension (Hancin-Bhatt & Nagy, 1994; Jiménez, García, & Pearson, 1996). At present, however, relatively little is known about how cognate knowledge interacts with the L2 humor comprehension.

Note from Table 5.6 that the occurrence of False Cognate errors during morphology-based humor comprehension was significantly lower than in the other linguistic humor types. Thus, it would appear that L2 humor comprehension is related to cognate status. In other words, when learners commit False Cognate errors, they appear to limit overall humor comprehension. It is widely accepted that vocabulary knowledge plays an important role in L2 (Anderson & Freebody, 1981; Proctor, Carlo, August, &

[46] It should be noted that processing errors and comprehension strategies were primarily used to support the findings presented in Table 5.4 (which addressed the acquisition order of linguistic-based humor); however, an additional finding arose: the increased number of False Grammar errors in reference to syntax-based comics. Based on participants' overall comprehension of syntax-based humor, this finding did not significantly affect comprehension level.

Snow, 2005), yet research is beginning to show that depth of vocabulary knowledge (e.g., morphological awareness) may also play a large role in L2 comprehension (Proctor & Mo, 2009). One component of lexical depth is cognate recognition.

To address the findings presented above, six learner protocols (two from each comprehension level) are discussed with reference to Comic 3: "Carbs".

Comic 3: "Carbs"[47]

To explain the humor of Comic 3, the morpheme 'carb' is extracted from the word *carburadores* 'carburetors' and treated as an individual lexical item. In the first example, learner Quinn used various bottom-up, top-down, and metacognitive strategies to achieve comprehension. She initiated the protocol by paraphrasing, using Spanish and English.

[47] Anonymous: I hate doing inventory.
Friend: It's really boring.
Baldo: Especially in the diet section
Friend: Diet?
Baldo: Yes, I'm counting *carb*uretors.

Interview 5.8: Quinn commenting on Comic 3[48]

> Quinn: "*Detesto hacer inventario*" "*Es muy* boring" "Especially in the section, in the diet section?" *Dietas*? Or maybe that's a false cognate. You can't say.
> Interviewer: Keep reading
> Quinn: Yeah, "*De las dietas*" "*Sí*" "*Estoy contando*" Oh! I actually get this. Okay, carburetors, but he's saying it as carbohydrates. So, it's like a play on words and I actually get it! Yeah! Yeah, cause I was like, "I know that's a diet, but this is at a car parts place."

She hypothesized about the correct meaning for the word *dietas* 'diets', commenting on whether it may be a false cognate. She finished her protocol explaining the dual interpretation of the morpheme 'carb' and discussed comprehension strategy use. She did not commit any errors during the protocol. This example exemplifies complete comprehension and the learners' interpretation of morphology-based humor by utilizing a variety of strategies, looking for important contextual cues (e.g., the illustration of a car parts store), and hypothesizing about unknown words (e.g., guessing word meaning based on cognate recognition). In the following example, Sam also comprehended the comic by implementing a variety of comprehension strategies.

Interview 5.9: Sam commenting on Comic 3[49]

> Sam: "I hate having to do inventory." "It's very boring, especially in the diet section." "The diet section?" "Yeah," *contando*, I don't know what *contando* means but it's always liking carbohydrates or something carbohydrates, I think. I don't know. Car parts? Why are they in a car parts store? I missed that, hold on. Oh, carburetors. Counting carburetors, like counting carbohydrates. I get it. Pretty funny. You really have to notice that Hot Rod, Inc., to get that one. I thought it was in a grocery store at first. I didn't even read it.

[48] Rating = Complete Comprehension
[49] Rating = Complete Comprehension

Sam's protocol demonstrated the importance of contextual cues present in comic strip humor. He initiated the think-aloud with paraphrasing, but stopped when confronted with the unknown lexical item *contando* 'counting'. He did not allow the unknown word to impede his comprehension processing. He commented on the item but skipped it and continued with the items he understood. Like Quinn, Sam committed no processing errors. His success with comprehension came after he scanned the text for additional information, noticed a vital contextual cue, then reread the final frame for confirmation. Although the word *contando* was not immediately salient, Sam ignored it and only attempted inference after revising his initial interpretation of the context.

In the following excerpt, Bill combined the three comprehension strategy types, but complete comprehension was impeded by comprehension of the word *contando*.

Interview 5.10: Bill commenting on Comic 3[50]

> Bill: Let's see. They don't like doing or one of them doesn't like doing inventory because it's boring and one says "especially in the diet section." He says, "in the diet section?" "Yes, because *contando*" *Contando*, I'm not sure what that is, but maybe something with carburetors and maybe it's something with carbohydrates and carburetors that go together.

In Interview 5.10, Bill began with a paraphrasing of the comic, but stopped when he reached the word *contando*. He reflected on his comprehension and then hypothesized about a potential interpretation. He never committed any processing errors, and his final sentence approached complete comprehension, but he never fully addressed the linguistic

[50] Rating = Partial Comprehension

element necessary for complete comprehension ('carb' being treated as an isolated morpheme).

Madeline was also constrained by word-level problems.

Interview 5.11: Madeline commenting on Comic 3[51]

> Madeline: Okay, so they are doing inventory and that guy is saying it's very boring. Especially the section with *las dietas*? The diets? *De las dietas* or whatever diets or the diets? *Estoy contando* … Yes, they are … they containing carbs? Carbohydrates? Maybe? *Carburadores.* I don't get it.

Similar to the approaches in the other examples, Madeline paraphrased the comic until she reached an unknown lexical item: "*De las dietas* or whatever diets or the diets". She reflected on the word but eventually continued with paraphrasing. Her interpretation of the word *estoy* 'I am' was coded as a False Grammar error because she changed the translation from the first-person singular form to the third-person plural form. She also committed a False Cognate error when she erroneously translated *contando* as "containing" rather than 'counting'. Madeline translated *carburadores* with the underlying meaning 'carbohydrates' but failed to notice the literal, surface form 'carburetors'. Therefore, her word-level problems prevented her from attaining complete comprehension.

The final excerpts demonstrate the word-level level problems associated with partial and minimal comprehension learners. In the first example, Jessica struggled with comprehension and never implemented additional strategies to aid her understanding.

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[51] Rating = Partial Comprehension

Interview 5.12: Jessica commenting on Comic 3[52]

> Jessica: He's like "I detest doing inventory when in a car parts store. It's real boring especially in the section of the *dietas*." I don't know what that is. Then he asks, like, "of the what?" She's like, "Yeah, it contains carburetors" maybe? I don't really know why that's funny.

Jessica's protocol began with paraphrasing, and she quickly moved past the unknown item *dietas*. However, she misinterpreted the word *contando* for "contains," a False Cognate error, and failed to isolate the bound morpheme *carb*. She placed the characters in the correct context when she mentioned "in a car parts store", but none of the strategies helped her achieve a significant level of comprehension.

In the final example, Carl also utilized a variety of comprehension strategies but had difficulty at the word level as well as contextual confusion.

Interview 5.13: Carl commenting on Comic 3[53]

> Carl: "I hate doing inventory." "It's really boring." "Especially in the section" I don't know *las dietas*. Um, *estoy contando*. They're in an auto store. Something about carburetors or they contain carburetors. I don't know why it's funny though. It's like boxes …

Similar to approaches to the other morphology-based comics, Carl used a combination of comprehension strategies but was unable to isolate the bound morpheme. He struggled with word-level difficulties, specifically with *las dietas* and *contando*. Unlike more successful participants, he did not overcome the word-based errors. In contrast, perhaps in an attempt to infer meaning from context, he focused on the visual aspect of the boxes, thereby committing a False Picture error.

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[52] Rating = Minimal Comprehension
[53] Rating = Minimal Comprehension

5.4.1 Summary

These examples reflect the three comprehension levels of the think-aloud participants in reference to morphology-based humor. The excerpts resemble the strategy implementation discussed in the previous section in that the successful participant was more skilled in circumventing processing errors by returning to approach the comic with a different strategy and by skipping or hypothesizing about unknown words. The data establish a connection between morphology-based humor comprehension and fewer cognate-based errors. This finding is similar to results from Ringbom's (1986) study, which found that if the L2 was closely related to the L1, the language learner benefited from the existence of cognate words, given that recognition and comprehension of those words is less demanding than that of completely alien words. This concept was demonstrated in Quinn's example, in which she hypothesized that *dietas* was most likely "diets". Sam also exemplified the positive relationship between L1 and L2 cognates with his translation of *contando* as "counting".

Conversely, Moss (1992), in a study of 400 first-semester Spanish-speaking university students, found that their ability to recognize Spanish–English cognates was lower than expected. These students recognized only 67% of cognates in context and 45% in isolation, which suggests that cognate recognition is not as fully developed as expected. Partial- and minimal-comprehension learners also demonstrated problems with cognate recognition, as exemplified here in various learners' problems with the words *contando* and *dietas*. In addition, when learners believed they had accurately translated an

L2 cognate, they were typically unable to reinterpret the lexical item. In fact, in a series of observational studies involving Brazilian low-intermediate learners of English, Holmes and Ramos (1993) found that the learners relied so heavily on cognate recognition that they failed to check for false cognates. This tendency was evidenced in Carl and Jessica's false association of *contando* with "containing".

Arnold (1993) confirmed that not knowing the meaning of false cognates is potentially more dangerous than not knowing the meaning of unfamiliar words, because with cognates, learners assume a level of comprehension. To clarify, L2 learners who notice an orthographic and phonological similarity between cognates often assume they have the same or similar meanings in both languages. As a consequence, they may link the new L2 word onto their conceptual representation of the corresponding L1 word. In the case of unknown words, the learners may be more aware of possible meaning differences between the words in a translation pair and may not blindly assign the new L2 word to a conceptual representation of its translation in the L1 (deGroot, 1993).

As shown in the interviews above, when confronted with word-level processing errors, the successful learner often adjusted strategies to aid comprehension without unnecessary focus on unknown items. These data indicate that learners isolate unknown words and/or commit processing errors on the lexical level. Hypothesizing and inferring prior knowledge were most successful when the participant had a strong lexical base. In the multiple-choice questionnaire, individual word focus was a strong indicator of comprehension success, which suggests that most learners approached linguistic humor

comprehension on the word level. This finding demonstrated a general preference for word-level, bottom-up processing. Laufer (1992) contends that the main obstacle to successful L2 comprehension is an "insufficient number of words in the learner's lexicon" (p. 31). Therefore, a strong lexical base in conjunction with the effective implementation of comprehension strategies appears to be one method in achieving success in L2 linguistic humor comprehension.

The following chapter concludes with a theoretical and applicable interpretation of the data found. Chapter 6 also addresses limitations in the study, proposes pedagogical implications, and discusses possible directions for future studies.

CHAPTER 6: DISCUSSION AND CONCLUSION

This final chapter draws conclusions from the results of the multiple-choice questionnaire (Chapter 4) and the think-aloud study (Chapter 5). As an overview, section 6.1 briefly reviews the results related to the research questions that have been answered in Chapters 4 and 5. Section 6.2 explores the implications for L2 humor research and cognitive processing while referencing Raskin's (1985) Semantic-Script Switch Theory of Humor (SSTH). In addition, Raskin's theory of a semantic network is revisited and discussed as it relates to L2 linguistic humor comprehension. Section 6.3 explores humor comprehension as it applies to overall communicative competence with a focus on lexical knowledge, metalinguistic awareness, strategy use, and social implications. Pedagogical suggestions are examined in Section 6.4 in which explicit proposals are made for the inclusion of linguistic-based humor and strategy training in the L2 classroom. Finally, a brief conclusion is drawn, limitations are addressed, and future research is proposed in section 6.5.

6.1 Summary of Results

The research questions in this dissertation addressed a gap in L2 research by investigating (1) the abilities of L2 learners to comprehend L2 linguistic humor at various stages of language study, (2) the overall comprehension of linguistic-based humor, (3) the comprehension strategies implemented while processing L2 humorous implicatures, and (4) the management of processing errors during L2 humor comprehension (Table 6.1).

Table 6.1: Research Questions

1) What is the overall comprehension of linguistic-based humor by L2 learners as shown in a multiple-choice and think-aloud format?
2) Is there an order of development in comprehension of the four linguistic-based humor types as shown in a multiple-choice and think-aloud format?
3) What comprehension strategies do learners implement while processing humor?
4) Is there a trend in errors (i.e. false cognates, etc.) committed during linguistic humor comprehension?

The quantitative and qualitative analyses led to results verifying that L2 linguistic humor comprehension was correlated with level of L2 study, implementation of comprehension strategies, and processing errors. The following sections (6.1.1 and 6.1.2) briefly summarize the results found from the multiple-choice questionnaire (6.1.1) and the think-aloud protocol (6.1.2).

6.1.1 Multiple-Choice Questionnaire

In the quantitative analysis in Chapter 4, new findings related to L2 linguistic humor comprehension were indicated. First, the quantitative analysis demonstrated that as learners progress through a language program their ability to recognize a script-switch and identify humorous incongruities increases. In addition, the quantitative analysis gave new insight into the acquisition order of the four types of linguistic-based humor. Namely, that semantics-based humor was the least understood when compared to morphology-, phonology-, and syntax-based humor.[54] This finding differs from our

[54] Although the statistical analysis was adjusted to reflect an imbalanced distribution of comics within each humor type, semantics-based humor was represented by the smallest number of comics, which may have influenced results.

original hypothesis, which predicted that the ability to recognize the humorous ambiguity in a phonological string would develop first, followed by word-segmentation (morphological), multiple-meaning words (semantic), and lastly phrase-based humor (syntactic). Finally, the comments made during the multiple-choice questionnaire suggest that a strong lexical base is a strong predictor of L2 humor comprehension.

6.1.2 Think-Aloud Protocol

While the multiple-choice questionnaire presented humor in an artificial manner (with L1 aids), the think-aloud study portrayed humor in a more naturalistic setting. The think-aloud component was a more rigorous testing method because it requires a greater depth of knowledge because the participants were required to have a more active understanding and the metalinguistic skills to communicate meaning. To my knowledge, this portion of the dissertation is the first research to identify comprehension strategies used and processing errors made by L2 learners while processing L2 humor. In the qualitative analysis, regardless of comprehension success, all participants preferred to use a bottom-up approach to understand linguistic-based humor. In addition, the findings did not suggest an acquisition order of the four linguistic-humor types and differed from the results found in the multiple-choice questionnaire. During the think-aloud protocol, morphology-based humor received the highest comprehension scores and an inverse correlation between morphology-based humor comprehension and cognate-based errors was established. The following section addresses how these findings contribute to Raskin's SSTH as it pertains to L2 acquisition.

6.2 Implications for L2 Humor Research and Processing

In Chapter 1, Raskin's (1985) SSTH was presented in which he discusses the idea of humor competence. His primary hypothesis is that a text can be considered humorous if two conditions are satisfied. These conditions are:

(1) the text is compatible, fully or in part, with two different scripts; and

(2) the two scripts with which the text is compatible are opposite. (p. 99)

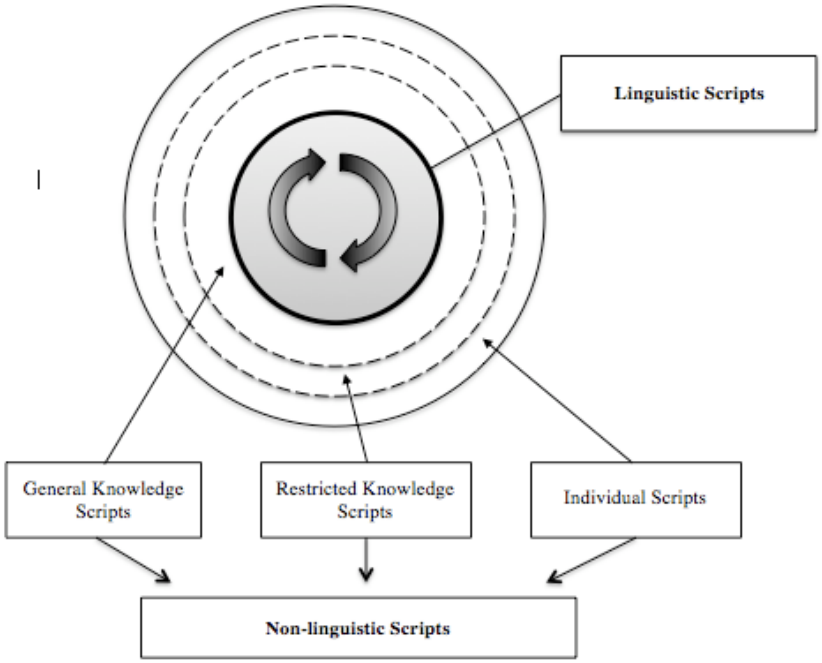
Raskin (1985) defines a script as, "a large chunk of semantic information surrounding the word or evoked by it. The script is a cognitive structure internalized by the native speaker and it represents the native speaker's knowledge of a small part of the world" (p. 81). He states that the more scripts readers have access to, the easier they switch to the opposing scripts. He defines scripts as linguistic or non-linguistic (general knowledge, restricted knowledge, and individual knowledge), which he demonstrates in Figure 1.1. Both types of scripts compose the 'semantic-network' of the ideal NS. According to script-based theories of humor, ideal speakers have complete access to linguistic-based scripts and then utilize previous experiences and background knowledge to access non-linguistic scripts in order to find humorous incongruities. Thus, to apply this theoretical basis to an L2 learner, adaptations must be made because learners do not have access to a complete semantic-network in their L2.

6.2.1 Raskin's Semantic Network and the L2 Learner

While Raskin's theory is based on the ideal NS, the current investigation is concerned with the applicability of the SSTH to L2 acquisition. Raskin's theory centers

on the idea of overlapping scripts and assumes cognitive access to a nearly complete semantic network; however, the L2 learner does not have a complete semantic network. Consequently, an L2 learner has limited access to linguistic and non-linguistic scripts. In fact, the current study indicates that learners frequently become embedded in linguistic-based scripts that allow them to eclipse access to non-linguistic scripts. The learners seem to focus primarily on complete comprehension of each individual linguistic script and are unable to evoke the necessary background knowledge that may aid comprehension. Raskin's (1985) figure depicting the orbicular nature of scripts (cf. Figure 1.1) has been adapted to demonstrate an L2 learner's arrangement of scripts.

Figure 6.1: L2 Adaptation of Raskin's Arrangement of Scripts[55]

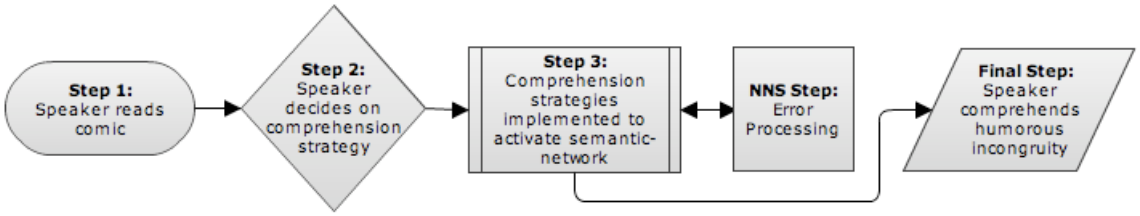


[55] Adapted from Raskin (1985, p. 247).

Figure 6.1 demonstrates how linguistic scripts overshadow the non-linguistic scripts. In the L2 learner's arrangement of scripts, the linguistic scripts consume the center and are outlined in a solid line to demonstrate how learners have difficulty transcending the linguistic scripts center. In contrast, the non-linguistic scripts are represented with dashed lines to symbolize how general knowledge, restricted knowledge, and individual scripts have semantic information moving between them and are not as constraining as linguistic scripts for the L2 learner or the NS. The dashed lines indicate that information pertaining to general knowledge could also be defined as restricted or individual knowledge and that access to one does not prohibit evocation of another. The data demonstrate that many L2 learners remain in the 'bull's-eye' of Raskin's arrangement of scripts (see Figure 6.1).

Based on the current study, as learners acquire their L2 they have greater access to a larger vocabulary base, can elaborate and expand meanings of words, comprehend multiple interpretations of words, and identify related words. Therefore, access to semantic scripts appears to increase throughout language study; but, unlike the NS speaker, learners have the additional complication of error scripts. The flow chart (Figure 5.1) presented in Chapter 5 is recreated below as Figure 6.3 to clarify the difference between NS and NNS linguistic humor comprehension processes.

Figure 6.3: Flow-Chart of Linguistic Humor Processing



Unlike the NS, error scripts further confound the NNS. Thus, their focus remains at a word-base level where they activate erroneous scripts, such as false cognates, and are unable to proceed to the final step. According to Raskin's theory, the ideal NS would begin the comprehension process with the same steps as the L2 learner. The ideal NS would read the comic (aloud or silently), decide on a comprehension strategy (consciously or unconsciously), and then proceed to humor comprehension once the appropriate scripts were accessed and overlapped. L2 learners initiate the same process to evoke the necessary scripts for comprehension, but remain within the linguistic-based scripts because they are confounded by the invocation of error scripts.

Raskin's theory does not account for the concept of incorrect overlapping scripts, which seem to be a primary cause of L2 learner misunderstandings. For example, Greg (Interview 5.3) and Eddie (Interview 5.6) misinterpreted the Spanish word *juego* 'game' as a verb "to play". In these examples, they were focusing on linguistic scripts and were unable to infer meaning from other non-linguistic scripts. This type of error was common among study participants, but would be unlikely to occur with a NS because their semantic network would not access or consciously attend to a verbal script after the indefinite article *un* 'a'. In order to understand humor, L2 learners must comprehend the

literal meaning that humorous texts convey (such as *juego* 'game'), as well as detect a mismatch between the literal meaning and the underlying implicatures.

6.2.2 Linking Raskin's Semantic Network and the L2 Learner

The comprehension of humor requires that scripts be opposite or opposing in nature in order to create an incongruity and comedic response, but script activation should be considered essential in all forms of L2 communication, regardless of their comicity. Although the current data centered on text-based humor, the correct implementation and activation of linguistic and non-linguistic scripts is necessary in all forms of L2 comprehension, humorous or otherwise. Furthermore, the implementation of error scripts can obstruct comprehension of humorous and non-humorous communication. To be a successful L2 communicator, a strong base of phonology, morphology, semantics, and syntax is required as well as the requisite background knowledge to make informed metacognitive connections.

Since scripts are created through experience with people, objects, and events in the world, learners begin to generalize across different experiences in order to develop an abstract, generic set of expectations about what will be encountered. These scripts are useful for the activation of the Raskin's (1985) script-switch because when learners encounter humorous texts, they do not need all of the scripts (i.e. thought bubbles represent conversation, punchline is in the final frame) because the schema for comic strips already exists. In this way, scripts can be seen as organized background knowledge

(Brown and Yule, 1983), which leads learners to expect or predict information. The ability to activate scripts can be extended to include all forms of discourse.

Various researchers (Fillmore, 1985; Barsalou, 1992; Callies, Keller, & Lohöfe, 2011) have posited that there exists an essential role of scripts in human cognition and that scripts, frames, or schema are the general format of knowledge representation. Scripts underlie word meanings and metalinguistic knowledge; therefore their importance in L2 comprehension is invaluable. The current study supports the notion that schemas are the format in which word meanings are stored in the mental lexicon and their activation contributes to humor comprehension. Humor comprehension can be seen as a multileveled and interactive process in which learners construct a meaningful representation of text using their schemata. While it has been known for some time that both content and formal schemata (Carrell & Eisterhold, 1983; Carrell, 2006) are necessary for a complete understanding of written texts in a learner's L1, the current study suggests this to be true in a learner's L2 and further supports the notion that schemata or script activation should be considered the cornerstone to L2 reading comprehension.

Understanding the role of schema in the comprehension process provides insights into why students may fail to comprehend textual humorous and non-humorous material. Most research in this area seems to agree that when students possess background knowledge on the topic they are reading (i.e. possess content schema), are aware of the discourse level and structural make-up of the genre of the text (i.e. possess formal

schema), and skillful in the decoding features needed to recognize words and recognize how they fit together in a sentence (i.e. possess language schema), they are in a better position to comprehend (Carrell & Eisterhold, 1983; Carrell, 2006). Deficiency in any of the above schemas appears to result in an L2 comprehension deficit. Humor processing is a distinctive type of L2 comprehension because learners must recognize and resolve overlapping, incongruent scripts.

If L2 learners do not have access to a complete semantic network and are frequently presented with linguistic-based error scripts, then this situation suggests that depth of vocabulary knowledge plays a fundamental role in L2 comprehension. Raskin implies that the semantic network is connected or linked (Figure 6.2) through various semantic constructs (e.g., synonymy, antonymy, etc.). Perhaps the concept of linking semantic information should be more explicitly taught within the L2 classrooms (see Section 6.4 for a more detailed explanation). If learners had a stronger and more robustly linked semantic network, they might be more adept at accessing the appropriate linguistic scripts and increase their retrieval of non-linguistic scripts. A more robust linking of the L2 linguistic script base could lead to an increase in L2 humor and overall L2 communicative competence.

6.3 Humor Comprehension and L2 Communicative Competence

Combining the outcomes of these studies indicates that comprehending language-based humor is difficult for most language learners. The skills required for accessing scripts as well as distinguishing between literal and figurative meanings appear to be

developing at this stage of L2 learning. This finding indicates a need for developing an awareness of the linguistic aspects and strategic components necessary for humor comprehension.

6.3.1 Lexical Knowledge and L2 Communicative Competence

The study showed that the importance of lexical knowledge and the ability to infer meaning from context contribute to L2 humor comprehension success; however, inferring lexical meanings from context is not an easy task. In Pulido's (2004) study of L2 lexical comprehension in reading, she found that the following processes aided her students:

(1) discerning unknown or unfamiliar words, thus recognizing that there is a gap in comprehension;
(2) inferring meaning from the context using linguistic, extralinguistic, or background knowledge;
(3) noticing relationships between the new lexical items and their significance; and
(4) correlating the new words with previous knowledge. (Pulido, 2004)

The present study helps confirm Pulido's findings in that some learners recognized unfamiliar lexical items but were unable to specify the words or phrases that were unknown or unfamiliar to them. These learners were aware of a gap in their comprehension but failed to discern the unknown or unfamiliar words. The less-successful participants rarely hypothesized about unknown lexical items, noticed the extralinguistic cues (such as illustrations or multiple-choice answers), or used background knowledge to aid comprehension. Contrastively, successful participants were more competent in discerning unknown words and inferring meaning from the

extralinguistic cues in the questionnaire. In some cases, successful learners also implemented the third process of noticing relationships, drawing on background knowledge to help comprehension.

This ability to notice relationships and draw on background knowledge may be the most instrumental aspect for learners to increase their ability to infer humorous implicatures. Learners should be encouraged to look beyond unknown lexical items by accessing linguistic and non-linguistic scripts and correlating new words with previous knowledge. For example, Carl (Interview 5.2) initially mistranslated the word *juego* 'game' as "they play" but, by changing strategies to access different scripts, he was able to reinterpret the text and find the correct overlapping script. Carl demonstrated the ability to find a link within his semantic network that allowed him to connect the information from the illustrations (e.g., a tennis racket) with semantic knowledge of the lexical item *juego*.

As Carl and others demonstrated, the ability to exploit links within the semantic network as well as the successful implementation of strategies proved useful when confronted with new or unknown words. This finding supports previous studies that found that lexical inferencing is the strategy most widely used by L2 learners, a process that involves making informed guesses as to the meaning of an utterance in light of the available linguistic cues in combination with learners' general knowledge of the world and their awareness of the task (Faerch, Haastrup, & Phillipson, 1984). The concept of lexical inferencing should be seen as a method to link lexical information from the

linguistic scripts with general, encyclopedic, and individual knowledge (non-linguistic scripts). Thus, an increased awareness of how words are formed and how they are interrelated (e.g., *juego* as a verb form and a noun form) may lead learners to notice linguistic relationships and correlate unknown words with previous knowledge, and thereby begin to fortify their links in the semantic network.

6.3.2 Metalinguistic Awareness and L2 Communicative Competence

An awareness of and capacity to reflect on how words are linked and how they relate to background knowledge and experiences is referred to as 'metalinguistic awareness' (Clark, 1978; Shultz & Robillard, 1980). Metalinguistic awareness may enable learners to determine the meanings of unfamiliar expressions found in metaphors, puns, and idioms, thereby evoking the distinct yet appropriate scripts necessary for humor comprehension (Docking, et al., 1999; Nippold & Fey, 1983; Spector, 1992). As L2 learners progress through language study, they may become intuitively or subconsciously aware of language rules and more cognizant of the linguistic variance within the language. The current study indicates that with increased L2 pragmatic and communicative competence, a learner has an increased metalinguistic awareness and can better filter out inappropriate scripts to comprehend humorous implicatures.

The ability to reflect on one's L2 language use and identify humorous markers involves various cognitive abilities, because awareness of structure separate from meaning is a crucial skill necessary for the resolution of incongruities (Shultz, 1972; Shultz & Horibe, 1974; Shultz & Robillard, 1980). Without an adequate L2 semantic

network and ability to reflect on this network, using or comprehending slang, idioms, puns, and sarcastic comments are difficult. If the semantic information is not salient and available, learners may not access the appropriate scripts in order to interpret humorous implicatures. The following section discusses how accessing correct scripts by making them more salient may increase with the correct implementation of comprehension strategies.

6.3.3 Strategy Use and L2 Communicative Competence

The present study indicates that successful learners use distinct but complementary comprehension strategies to achieve a higher level of understanding and overcome processing errors (Singhal, 2001). A coordinated implementation of bottom-up, top-down, and metacognitive strategies was the strongest predictor of humor comprehension success. This finding deviates from previous studies on reading comprehension that suggest that more proficient L2 learners favor a top-down, meaning-based approach and less successful learners prefer to use a more localized, bottom-up process

Learners who understood the implicatures had the awareness to implement lower-level word identification processes along with higher-level syntactic and semantic processes. Thus, the importance of background knowledge and experience contributed as much as the decoding of sounds and letters into words, clauses, and sentences. Furthermore, the ability to analyze the humor input from a metalinguistic approach (i.e.

the ability to describe linguistic phenomena and form mental connections) was of equal importance.

If a central goal of L2 acquisition is to increase communicative competence, then the current study suggests that learners need to be encouraged to search outside of the linguistic scripts when presented with new input. Learners should be pushed to draw analogies between linguistic information and background knowledge. In this way, they will increase their semantic network by creating new links between their linguistic scripts and their non-linguistic scripts. Hopefully, as these links are fortified, they will lead to an increased ability to make humorous (and non-humorous) inferences. The ability to make inferences within a textual base like comic strips may help increase learners' ability to make appropriate inferences during verbal exchanges as well.

6.3.4 Social Implications and L2 Communicative Competence

Due to the amount of metaphorical language embedded in all forms of communication, the inability to interpret and comprehend humor may have a negative effect on learners' educational and social environments. Hamersky (1995) and Spector (1990) claim that difficulties understanding and appropriately using incongruous or metaphorical language can result in academic and social hardships. Therefore, an increased awareness of how comical interactions occur may help learners manage communicative events. Coser (1966) clarifies this claim by making the analogy that to say a joke and not hear anyone laugh is akin to initiating a handshake only to have one's outstretched hand ignored.

The present research indicates that linguistic deficits impede the ability to comprehend text-based humor, but this deficit could extend beyond comic strips and present itself in social environments. An inability to understand linguistic ambiguities and humor may lead to feelings of inadequacy in understanding what others seem to understand, embarrassment, reduced academic performance, and a lack of confidence during verbal interactions (Spector, 2009b). Furthermore, for many language learners, being able to participate actively in humorous conversations is crucial to assimilating into the target language culture (Apte, 1987; Davies, 2003), especially so if being funny and telling humorous stories are a fundamental part of their personalities.

Learners may not have access to L2 examples of playful interactions and could flounder when presented with a teasing or joking exchange in which they are expected to understand implicatures and actively participate. These learners may never have had the opportunity to observe and internalize the various extralinguistic cues present in humorous dialogues, or perhaps they misunderstood or never noticed the implicatures. As Beardsmore (1982) points out, "the further one progresses in bilingual ability, the more important the bicultural element becomes, since higher proficiency increases the expectancy rate of sensitivity towards the cultural implications of language use" (p. 20).

Some interactions with native speakers may be construed as offensive, although the offender may not be aware of any wrongdoing at the time. Unintentional insult, denial of requests (Bardovi-Harlig & Mahan-Taylor, 2003) or the misuse of sarcasm can all be identified as plausible pragmatic liabilities. By laughing at a joke, an interlocutor is

demonstrating support, which implies agreement with the message, including any attitudes, presuppositions, or implicatures contained in the humor. This type of humor support and the implications that follow are true for native and non-native speakers alike (Hay, 2001). Paksoy (1988) contends that in order to attain the highest level of language competence, humor should be understood. Humor research then may help learners assimilate into the target community more effectively.

If nonnative speakers do not become aware of pragmatic cues that indicate a humorous exchange, they may suffer communication problems. The following section discusses how L2 classrooms are seen as communities of practice that can help in developing learner's ability to recognize and play with language and humor.

6.4 Pedagogical Implications

Although this investigation did not seek to test the effectiveness of any pedagogical intervention in promoting humor comprehension, some suggestions are worth mentioning. The information gained from this study can inform teachers and textbook writers as to where they could focus their energies and expertise to maximize L2 humor comprehension. If researchers and textbook writers were more cognizant of the development of L2 acquisition of humor in phonological, syntactic, morphological, and semantic realizations, then teachers could implement appropriate techniques to promote an effective path to linguistic humor development. Given that humor, ambiguity, and figurative language are so prevalent in verbal exchanges, L2 learners should be explicitly taught how to abstract meaning from context. This can be accomplished through repeated

exposure to ambiguous language and humor accompanied by instructional support and facilitation (Spector, 1992, 2009b)

6.4.1 Linguistic-based Humor in the L2 Classroom

As language play is integral to communicative competence, work on linguistic humor can have a number of benefits. Therefore, instruction that promotes a heightened awareness of semantic depth and breadth, deserves further consideration and implementation. Following a framework proposed by Carlo (2004), students should be exposed to semantics-building strategies that focus on word knowledge including: (1) multiple-meanings or word depth, (2) polysemy, (3) morphology, (4) cognate recognition, and (5) phonological awareness. As Gass and Selinker (1994) have suggested, "the lexicon may be the most important component for learners" (p. 270). The use of authentic or contrived materials (e.g., activity sheets or games) with appropriate well-developed contextual support may provide additional opportunities and structure for learners who have problems understanding abstract or ambiguous language.

Lexical knowledge paired with linguistic analysis can be encouraged with the introduction of comic strips to the L2 classroom, since comics are considered one of the prototypical genres of humor (Hempelmann, 2008; Raskin, 2008). Comics often exploit the discrepancy between literal and figurative meanings with the cartoon characters employing the literal interpretation for comedic effect. Therefore, introducing comprehension strategies using newspaper comics may promote higher-level thinking, to

improve writing skills, and build reading skills (Liu, 2004; Sherman & Wright, 1996; Wright & Sherman, 1994).

Ousselin (1997) argued that teaching business culture and terminology requires a variety of pedagogical resources. He suggested that comic strips, because they are versatile, easy to use, and culturally relevant, can complement L2 French business courses. Williams (1995) investigated how comic books can be used as instructional materials for ESL students with low intermediate-level English language skills, and with limited discourse and interactive competence. Williams found that using comic strips in L2 classrooms can guide learners to hypothesize about the cartoons' language, raise awareness of pragmatics, and emphasize linguistic scripts. Furthermore, comics can be used to stimulate learners' cognitive processes because they relate to explicit and implicit meanings conveyed by textual material.

The current investigations suggests that teachers include activities to enhance learners' comprehension of linguistic humor in the following ways:

6.4.1.1 Semantics-based Humor

- Provide comics and have students locate and explain the multiple-meaning word(s) that create the humor.
- In pairs or groups, students can write sentences that demonstrate the different meanings of the word or write definitions.
- Teachers could write original comics with blanks and the students could fill them in with an appropriate multiple-meaning word.

6.4.1.2 Syntax-based Humor

- Teachers could collect cartoons and have the students identify and discuss the humorous idioms in them.

- Students could act-out the literal, idiomatic interpretations.
- Television shows and advertisements could be shown in class and the students could write their own advertisements with the same idiomatic expressions or use an original idiom to sell the same product.
- Humorous idioms could be discussed in reference to their transparency:
    (1) *Run into a stone wall* (relatively transparent)
    (2) *Break a leg* (not transparent)

6.4.1.3 Phonology-based Humor

- Students could be asked to recognize and explain the phonemic differences in minimal pairs, sound, word, or phrase reversal in metathesis, or alter stress in select words.
- When using comics, students could identify the source of humor and then replace it with the 'real word'. For example:

    (3) A: What do ghosts have for breakfast?
    B: Scream of wheat. (Spector, 2009a)

- Students could explain why the phoneme shift was funny and try to replicate it with an additional phoneme.
- Focus student's attention on how words are pronounced rather than spelled by having them read phonology-based comics to each other

6.4.1.4 Morphology-based humor

- Students could be encouraged to segment and resegment words to create humor by creating original, humorous words with L2 affixes.
- Students could practice manipulating and defining the meanings of affixes by deducing morphological puns found in comic strips.

The above examples demonstrate how humor can be used as a formidable tool for sensitizing students to phonological, morphological, lexical, and syntactic variations. Schmitz (2002) asserts that humorous material can add variety to a class, provide a

change of pace, and contribute to the reduction of tension normally associated with L2 language learning.

Humor in the classroom offers language teachers the opportunity to present linguistic elements in an amusing and authentic way. All types of humor (text-based, audio, and audiovisual) better prepare learners to deal with the real world, since day-to-day, authentic communication is full of linguistic and non-linguistic humor (Trachtenberg, 1979). If the primary focus of language teaching is to develop communicative competence, then teachers should include instruction of humorous implicatures.

6.4.2 Strategy Training in the L2 Classroom

Pedagogically, the findings of this study suggest that strategy use has a positive effect on humor comprehension because successful learners used the comprehension strategies more effectively than less-skilled learners. Providing contextual support, using a cognitive strategies approach, and using explanation tasks can facilitate the acquisition of language skills related to ambiguity and humor (Spector, 2009b). Previous studies have suggested that reading comprehension strategies are teachable and, when they are taught, such strategies help improve students' performance on comprehension and recall tests (Brown & Palincsar, 1989; Carrell, 1985; Pearson & Fielding, 1991; Tsai, et al., 2010). This indicates that explicit instruction in strategy use such as translation strategies or inferential strategies like using background knowledge, making analogies, relating new to known information, and/or making personal associations may help to improve

students' performance in humor comprehension (Cohen, Weaver, & Li, 1998; Tsai, et al., 2010). In particular, the goals of strategy training would be to:

(1) Improve the individual's awareness of the task;
(2) Help the individual find the relevant answer;
(3) Describe the strategy to the learner; and
(4) Teach the individual how to apply the relevant strategy with practice materials.

Oxford and Crookall (1989) discuss various comprehension strategies (such as planning, monitoring, inferencing, translation, or lowering anxiety) that may be 'operationalized' into learning techniques, specific behaviors, problem-solving abilities, or even general study skills that assist learning. Consequently, teaching practitioners may wish to design reading and listening tasks that promote strategies considered useful for successful processing of humorous texts at the micro and macro levels. The goal of learning comprehension strategies is to teach learners *how* to learn rather than *what* to learn (Schumaker & Deshler, 1984). For example, determining which linguistic humor elements are understood and which are not can help clarify which strategies are needed to help learners grasp the nature of multiple-meaning words, or to develop a heightened awareness of word segmentation. If a learner is not successfully accessing scripts, they may benefit from strategy training because they would be more aware of how to approach unknown lexical items.

Bottom-up techniques support comprehension beginning at the phonemic level and progress to include phrasal awareness. Additionally a bottom-up approach may allow for the intervention of higher-level, problem-solving techniques when learners are

presented with unknown or unfamiliar information. Other techniques involve top-down approaches that are based on the notion of inferencing by prediction and drawing analogies. Appropriate strategies can be developed if the skills that are weak and require attention are addressed in a more direct manner.

Because the present results indicate that employing a variety of strategies was the most useful for humor comprehension, we suggest that teachers model and encourage different strategies in different contexts. To begin, learners should be aware of the task demands (e.g., understanding humorous implicatures), find a relevant strategy (e.g., bottom-up for word-based comprehension, top-down for utilizing background information, and metacognitive for comprehension awareness), and apply the strategy to practice materials (e.g., comic strips). In this way, teachers can encourage learners to fortify and create a metacognitive awareness of the links between lexical information and background knowledge.

Previous studies have found that strategy training may lead to improved L2 pragmatic comprehension and that a metacognitive awareness of strategy use may be taught to assist learners in meeting the pragmatic communicative demands placed upon them (Bardovi-Harlig, 1999; Eslami-Rasekh, 2005; Kasper, 2001b; Kasper & Blum-Kulka, 1993; Kasper & Rose, 2002; Kasper & Schmidt, 1996; Koike, 2009; Koike & Pearson, 2005; Takimoto, 2009). A metacognitive awareness of linguistic components and how they relate to comprehension involves an analytical perception of the units of language (phonemes, morphemes, words, and syntactic structures), and the ability to

represent each unit separately, disassociating form from semantic content, and consciously monitoring comprehension strategy use in order to achieve understanding.

Strategy training could be accomplished by helping learners to become more cognizant of their own strategy use by asking them to verbalize comprehension methods. Verbalizing their process would encourage a heightened awareness and increase comfort with different strategy implementation. To demonstrate, learners could be asked to employ inferencing strategies by analyzing words into various components, such as roots, prefixes, and suffixes to help determine word meaning. This type of activity could highlight areas of deficiency and help learners recognize when a strategy is not working. In turn, the teacher would be able to assist in the implementation of an alternative approach. For example, knowledge of the semantic content found in lexical items is valuable; however, learners should be aware that word morphology may not always be a valid predictor of unknown lexical items. The tendency to identify morphological units as 'familiar' can lead learners to assign incorrect semantic content. Therefore, learners may be encouraged be wary of 'pseudofamiliarity' and implement other strategies to assist comprehension.

The most effective strategy training may consist of encouraging learners to become more aware of their L2 strategy use. Successful humor comprehension learners did not expect to understand each lexical item as they participated in the humor questionnaire; they were better prepared to assess their level of comprehension by questioning what they understood. Their success was based on the ability to decide what

to ignore and what was necessary for comprehension. This suggests that learners should be made aware that questioning their degree of comprehension may contribute to successful humor comprehension. "Adding 'awareness' or knowledge about a strategy's evaluation, rationale, and utility should greatly increase the positive outcomes of instruction" (Carrell, 1989, p.129). An understanding of the processes that facilitate and those that hinder L2 comprehension can provide structure to and build upon the skills learners already use in their L1.

6.5 Limitations and Future Research

This study, like many others, is limited both in the ability to make general claims about L2 humor comprehension and in the implementations of the experiment. Regarding the ability to make broad claims, generalizations between the two experiments are difficult because of their differing experimental designs. The lack of access to L1 aids during the think-aloud study created this disparity. However, the purpose of the think-aloud protocol was to provide additional support for the findings of the multiple-choice questionnaire, which was achieved with their use in language classes. In regards to claims about the overall comprehension of humor through year of study, the data might have been more robust if the learners had taken an IQ or L2 proficiency exam prior to the humor questionnaire. In this way, the data could have been analyzed more precisely in reference to metalinguistic and overall intellectual development versus L2 humor comprehension.

Regarding the implementation of the experiment, the importance of context on learners' humor comprehension should be considered. The stimuli in this study were presented in a decontextualized environment. When confronted with humor in real-world environments, learners will not have access to L1 aids or to multiple choices. If the humorous input had been part of a spontaneous conversation, for example, differences in the level of comprehension might have been noted.

It could prove interesting to reflect upon whether a spontaneous exchange between an L2 learner and a native speaker or two L2 learners would hamper or help learners grasp humorous implicatures. In a spontaneous exchange, participants must attend to a complex and rapid flow of language and cannot focus on each individual linguistic aspects of the target language (Berlin, Blank, & Rose, 1980; Spector, 1990). On the other hand, a spontaneous, conversational interaction offers facial, gestural, intonational, and situational cues that may guide a learner towards comprehension (Wallach & Lee, 1980). In addition, future research could expand the scope of this exploration by comparing lower-division learners with more advanced learners or bilinguals. A similar experimental design or one within a more natural or naturalistic setting would make a welcome contribution to the development of pragmatic research and provide insights into what could potentially be incorporated in L2 pragmatic instruction. The current data indicated that learners' comprehension of language-based humor improves as they progress through their Spanish studies. In order to investigate whether this increase in comprehension is due to a general increase in metalinguistic

development due to their increased experiences in the educational system or reflects to an increase in L2 comprehension would require other measures and a much larger sample size. A future study could investigate this by partitioning the learners by year of study (e.g., freshman, sophomore, etc.) and/or age and run comparative ANOVAs.

Another limitation was the application of the think-aloud protocol as a research tool. While think-aloud protocols continue to be used in L2 research, they do contain drawbacks (Block, 1986; Olson, et al., 1984). The most basic concern expressed in the literature is that true cognitive processing is unobservable. In other words, participants may be unaware of the operations of memory, attention, and comprehension processes. Ericsson & Simon (1980) point out that as processes become automated, they become unconscious. Therefore, only the final thought product is left in memory and available for reporting to an interviewer rather than the steps and processes that lead to the final thought. In addition, participants may report on what they *think* is occurring rather than what is *actually* occurring. Future studies should recognize the discrepancy between knowledge and actual use when using think-aloud report data. Lastly, it should be recognized that considerable differences exist in the tendency to speak aloud, as personality types vary.

It would be interesting to replicate this study using the multiple-choice questionnaire as the basis for the think-aloud protocol. One group of learners would receive only the questionnaire while another similar group of learners would complete the questionnaire during a think-aloud protocol. Due to the amount of pragmatic research that

is conducted through questionnaires, these data could provide insight into how L2 learners manage pragmatic phenomena presented in questionnaires.

The choice of individual comics from various countries, of varying linguistic difficulty (some translated, some native), may have influenced results. Although the comics were reproduced directly from international, Spanish-speaking newspapers and precautions were taken to use comics that did not hinge upon specific cultural knowledge, it was impossible to find comics that would be considered completely 'culturally' neutral. Finding comic texts from a single source (i.e. one comic writer) would allow more general claims about linguistic humor comprehension and could address cultural topics as well. Perhaps future L2 humor researchers could design and illustrate comedic stimuli (i.e. original comic strips) based on the criteria necessary for linguistic-based humor. This type of study design would allow for a more controlled analysis. The researcher could manipulate the grammatical and semantic structures within the comics in order to focus participant's attention on the linguistic elements being studied.

Future studies grounded in linguistic humor are highly encouraged. The results from this study of L2 linguistic humor comprehension indicate that future research should consider the following issues:

(1) empirical studies validating the explicit instruction of comprehension strategies with pre- and post-tests;
(2) analysis of linguistic humor comprehension across different learner populations (heritage speakers, bilinguals, etc.);
(3) analysis and measurement of linguistic-based humor in spontaneous conversation;
(4) measurement of humor comprehension via audio and/or audio-visual forms;

(5) analysis of strategy use within other humor types (e.g., culture-based or reality-based); and
(6) validation of the current results and how they are related to pre-test proficiency level.

As mentioned in the first chapter, there are at least three advantages to using humor comprehension as a probe of L2 learner's linguistic abilities. First, humor is a common, naturally occurring part of modern culture. Thus linguistic humor has the unique advantage of automatically focusing attention on form for the purpose of resolving the humor. In contrast, such linguistic awareness tasks as phoneme counting or phoneme deletion call attention to form in a way that is considerably more artificial and unnatural.

The second advantage to humor comprehension studies is that they require minimal training for the language learner and can immediately become implemented in SLA programs because they do not place explicit emphasis on the awareness being tested. If training is necessary to test the development of pragmatic markers, such as compliment responses (Cheng, 2011), the ability being measured is altered in the process because the participants have a heightened awareness of what they are being tested on (Read, 1978). When humor comprehension is being tested, the learners may not realize which aspects of the humor are being tested and might approach the material in a more natural manner. Comic texts can be introduced from the beginning of L2 study without the need to train learners in a specified testing technique.

The final advantage is that humor is inherently interesting and pleasant for both the subject and the experimenter. Introducing and testing humorous material may motivate learners to study, because humor allows learners to feel a sense of freedom and pleasure that may not be present in other experimental designs. Humor studies allow learners to experiment with language play and linguistic forms, thus encouraging active participation in their language acquisition. Humor research may remove emotional barriers by reducing stress and embarrassment, and may enable timid learners to more easily interact with other learners or with a researcher. This dissertation proposes that these advantages should encourage future scholars to pursue research in L2 humor comprehension and extend the findings presented here.

APPENDIX 1: COMICS FROM QUESTIONNAIRE

I. Semantics-Based Comics

A. Comic 1: "Love" (Wilson & Wilson, 2006)

B. Comic 2: "Moving up" (Rios, 2006)

II. Morphology-Based Comics

A. Comic 3: "Carbs" (Cantú & Castellanos, 2006)

B. Comic 4: "Library" (Chatfield, 2006)

C. Comic 5: "Lunatic" (Hart, 2006)

III. Phonology-Based Comics

A. Comic 6: "Donkey" (Cantú & Castellanos, 2006)

B. Comic 7: "PresBust" (Loiseau, 2006)

C. Comic 8: "Revealed" (Hart, 2006)

D. Comic 9: "Waiter" (Rios, 2006)

IV. Syntax-based Comics

A. Comic 10: "Women" (Cantú & Castellanos, 2006)

B. Comic 11: "Coffin" (Tute, 2006)

C. Comic 12: "Insurance" (Wilson & Wilson, 2006)

D. Comic 13: "Horns" (Hart, 2006)

E. Comic 14: "Knees" (Parker & Hart, 2006)

APPENDIX 2: IRB FORM FOR MULTIPLE-CHOICE QUESTIONNAIRE

INSTRUCTIONS FOR COMPLETING CONSENT FORM 2:

1.Title: Linguistic Humor Comprehension in Spanish as a Second Language

2. Conducted by:

Karyn Hopper
Department of Spanish and Portuguese (BEN 5th Floor)
University of Texas at Austin
512-294-8357
klhopper@mail.utexas.edu

Faculty Sponsor:

Dale A. Koike
Department of Spanish and Portuguese (BEN 3.108)
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512-232-4508
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3. Purpose:

First and second language acquisition research suggests that most language development is "function-driven," in that when there is a need to understand and express messages, the learner will learn the appropriate linguistic form (Kasper, 1997). An awareness of how playful interactions occur should help learners cope with standardized communicative events. By providing humorous input in the classroom, the teacher has an opportunity to facilitate L2 learning and present it within a sociocultural context. If researchers and textbook writers were more cognizant of which linguistic resources developed first in learners' humor comprehension, then teachers could act as guides and encourage them to appreciate it and perhaps assimilate into the target community more efficiently. Such awareness may provide insight into L2 learning and the acquisition of L2 sociolinguistic competence in particular (Bell, 2002).

The goal of using humor input in the classroom is not to familiarize learners with all types of humor used in the target culture, but to raise their awareness of different humor expression, thus enabling them to understand and use these options when and if they choose to use humor on their own. Second language classrooms are seen as communities of practice that can help a learner's pragmatic socialization and L2 identity (Schmitz, 2002). After reading and processing various cartoons, the learner will have a better idea of how humor is expressed.

Bell, N. "Using and understanding humor in a second language: A case

study." Diss. 2002.
Kasper, G. "Can pragmatic competence be taught?" Network #6. 1997. University of Hawai'i, Second Language Teaching & Curriculum. 31 Oct. 2005 <http://www.nflrc.hawaii.edu/NetWorks/NW06/>.
Schmitz, J. "Humor as a pedagogical tool in foreign language and translation courses." Humor: International Journal of Humor Research 15.1 (2002): 89-114.

The volunteer participants will be approximately 400 Spanish L2 learners at the University of Texas in Austin and will receive no financial or academic compensation for taking part in the study. These native English-speaking learners will be in various stages of Spanish language study. Approximately 100 students from each of the four levels of lower-division Spanish will be tested. Four classes will be randomly selected from each of the Spanish courses offered at the university, excluding all courses the researcher is teaching. These will include four courses from Spanish 506, 507, 312K, and 312L. Along with the courses randomly selected some students (five at each level for a total of twenty volunteers) will be asked to participate in a think-aloud portion of the study. They will take the same survey as the other students but they will discuss aloud to the primary researcher their thinking process. This broad base will allow me to ascertain how and when each of the four linguistic skill groups develops (i.e. semantic, phonologic, syntactic, and morphologic humor). This cross-sectional study will document learners' linguistic humor development throughout their language study. I will be able to determine which of the areas develop first which develop last. With this information, I can recommend where teachers and textbooks should be focusing their energies and expertise.

Participants will complete a background questionnaire to ascertain their language history and all Hispanic heritage learners will be eliminated since their home environment may give them an unfair advantage. Any learner who has had an extended stay in a Spanish speaking country will also be disqualified from the investigation.

4. Procedures:
   a) Students will complete a language background questionnaire
   b) Students will complete the cartoon questionnaire on blackboard. This portion contains multiple-choice and fill in the blank questions.
   c) Some students (n=20) will be audio recorded during the cartoon questionnaire. This will be the "think-aloud" portion and will take place outside of class time on the 5th floor of Benedict Hall.

5. Time: less than 30 minutes for all participants
6. Risks: The risk associated with this study is no greater than everyday life

a) The only potential risk is the loss of confidentiality by the participants, but since their name and ID will never appear in connection with the study, even the primary researcher will have no way to connect the participant with an individual survey.
b) For the think aloud students, voice recognition could potentially tie them to the questionnaire which is why the tape will destroyed as soon as it is transcribed. Their name/ID will never appear on the physical tape itself.
c) As stated above, to maintain fidelity of the questionnaire and in order to truly get a sample of second language humor development, the questionnaire must take place in the classroom. If the students were allowed to take the questionnaire home, they would have access to bilingual speakers and a Spanish/English dictionary which could potentially compromise the research results.
d) If only volunteer participants took part in the survey, outside of class time, the results would be skewed because the participants would be motivated by a monetary reward or, perhaps, the only respondents would be Spanish language majors in which case a true sample of the typical language learner would not attained.

Benefits: There are many potential benefits to the survey participants.

a) They will be exposed to a different part of language study that is often overlooked in the classroom.
b) Students enjoy looking at cartoons.
c) They have the opportunity to laugh and enjoy themselves while learning a second language.
d) In being exposed to linguistic humor, which is often based on ambiguity, the students will foster flexibility in thinking about language and social situations.
e) Figurative language is the basis for many forms of linguistic humor and if the researcher can help determine which aspects are difficult for the language learner then perhaps the lack of understanding which often results in frustration, embarrassment, and confusion can be avoided.

7. Compensation: There will be no compensation.

8. Confidentiality and Privacy Protections:

The data will be stored on the primary researcher's home computer without public access. The names and/or IDs of the participants will never be tied to the research data. For the students that participate in the think-aloud portion, they will be audio-taped, but the tapes will not have their names of IDs attached to them. They will randomly be assigned a number and the tapes will

be destroyed as soon as they are transcribed. Studies with audio or video recordings, participants will be told:

a) interviews or sessions will be audiotaped;
b) tapes will be coded so that no personally identifying information is visible on them;
c) tapes will be kept in a secure place (e.g., a locked file cabinet in the investigator's office);
d) tapes will be heard or viewed only for research purposes by the investigator and his or her associates;
e) tapes will be erased after they are transcribed or coded.

Title Linguistic Humor Comprehension in Spanish as a Second Language IRB PROTOCOL #

Conducted By: Karyn Hopper
Of University of Texas at Austin: Spanish and Portuguese Department
Telephone: 512-294-8357

You are being asked to allow your students to participate in a research study. This form provides you with information about the study. The person in charge of this research will also describe this study to you and answer all of your questions. Please read the information below and ask any questions you might have before deciding whether or not to take part. Your students' participation is entirely voluntary. They can refuse to participate without penalty or loss of benefits to which they are otherwise entitled. They can stop their participation at any time and their refusal will not impact current or future relationships with UT Austin or participating sites. To do so simply tell the researcher you or one of your students wishes to stop participation. The researcher will provide you with a copy of this consent for your records.

The purpose of this study is to document learners' linguistic humor development throughout their language study.

If you agree to be in this study, we will ask your students to do the following things:

- take a language background questionnaire
- take a cartoon questionnaire

Total estimated time to participate in study is less than 30 minutes

Risks of being in the study

- The risk associated with this study is no greater than everyday life.
- This questionnaire may involve risks that are currently unforeseeable. If you wish to discuss the information above or any other risks you may experience, you may ask questions now or call the Principal Investigator listed on the front page of this form.

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Compensation:

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Confidentiality and Privacy Protections:

- The data resulting from your participation may be made available to other researchers in the future for research purposes not detailed within this consent form. In these cases, the data will contain no identifying information that could associate you or your students with it.

The records of this study will be stored securely and kept confidential. Authorized persons from The University of Texas at Austin, members of the Institutional Review Board, and (study sponsors, if any) have the legal right to review your research records and will protect the confidentiality of those records to the extent permitted by law. All publications will exclude any information that will make it possible to identify you as a subject. Throughout the study, the researchers will notify you of new information that may become available and that might affect your decision to remain in the study.

Contacts and Questions:

If you have any questions about the study please ask now. If you have questions later, want additional information, or wish to withdraw your participation call the researchers conducting the study. Their names, phone numbers, and e-mail addresses are at the top of this page. If you have questions about your rights as a research participant, complaints, concerns, or questions about the research please contact Lisa Leiden, Ph.D., Chair of The University of Texas at Austin Institutional Review Board for the Protection of Human Subjects, (512) 471-8871 or email: orsc@uts.cc.utexas.edu.
You will be given a copy of this information to keep for your records.

Statement of Consent:

I have read the above information and have sufficient information to make a decision about participating in this study. I consent to participate in the study.

Signature:_____ Date: _____

_____ Date: _____
Signature of Person Obtaining Consent

Signature of Investigator:_____ Date: _____

APPENDIX 3: IRB FORM FOR THINK-ALOUD PROTOCOL

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1. Title: Linguistic Humor Comprehension in Spanish as a Second Language

2. Conducted by:

Karyn Hopper
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Title Linguistic Humor Comprehension in Spanish as a Second Language
IRB PROTOCOL #

Conducted By: Karyn Hopper
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Telephone: 512-294-8357

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If you agree to be in this study, we will ask you to do the following things:

- take a language background questionnaire
- take a cartoon questionnaire
  Total estimated time to participate in study is less than 30 minutes
  Risks of being in the study
- The risk associated with this study is no greater than everyday life.
- This questionnaire may involve risks that are currently unforeseeable. If you wish to discuss the information above or any other risks you may experience, you may ask questions now or call the Principal Investigator listed on the front page of this form.

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Contacts and Questions:

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Statement of Consent:

I have read the above information and have sufficient information to make a decision about participating in this study. I consent to participate in the study.

Signature:_____ Date: _____

_____ Date: _____

Signature of Person Obtaining Consent

Signature of Investigator:_____ Date: _____

APPENDIX 4: BACKGROUND INFORMATION

I. BASICS

1. What Spanish class are you in? _____
2. What year are you in school?
   - ❑ Freshman ❑ Sophomore ❑ Junior ❑ Senior ❑ Graduate Student
   - ❑ Other _____
3. ❑ Male ❑ Female
4. What is your dominant language (i.e. the language you speak most comfortably today)?
   - ❑ English ❑ Spanish ❑ Other: _____

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